



Remedial Investigation Report Old Ley Creek Channel Site Town of Salina, New York

Prepared for

New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233



Prepared by

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July 2010
Revision: DRAFT
EA Project No. 14368.42

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LIST OF ACRONYMS

4-4'DDD	4-4'Dichlorodiphenyldichloroethane
4-4'DDE	4-4'Dichlorodiphenyldichloroethylene
4-4'DDT	4-4'Dichlorodiphenyltrichloroethane
amsl	Above Mean Sea Level
ASP	Analytical Services Protocol
AWQS	Ambient Water Quality Standards
bgs	Below Ground Surface
CHA	Clough-Harbor Associates
COC	Contaminants of Concern
COEC	Contaminants of Ecological Concern
EA	EA Engineering, P.C. and its affiliate EA Science and Technology
ELAP	Environmental Laboratory Approval Program
FACU	Facultative Upland
FACW	Facultative Wet
FS	Feasibility Study
GPS	Global Positioning System
MTBE	Methyl tert butyl ether
NYCRR	New York Code of Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
OBL	Obligate
PCB	Polychlorinated Biphenyl
PID	Photoionization Detector
ppm	Parts Per Million
PSS1E	Palustrine, Scrub-Shrub, Broad-Leaved Deciduous, Seasonally flooded/saturated
QA	Quality Assurance
QC	Quality Control
RI	Remedial Investigation
SCG	Standards, Criteria, and Guidance
SCO	Soil Cleanup Objectives

SPS	Solvents and Petroleum Services, Inc.
SVOC	Semivolatile Organic Compound
TAL	Target Analyte List
TOC	Total Organic Carbon
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

1. INTRODUCTION AND PROJECT OVERVIEW

The New York State Department of Environmental Conservation (NYSDEC) tasked EA Engineering, P.C. and its affiliate EA Science and Technology (EA), to perform a Remedial Investigation (RI)/Feasibility Study (FS) at the Old Ley Creek Channel site in the town of Salina, Onondaga County, New York (Figure 1-1). The original RI/FS Work Assignment requested the following four tasks:

- **Task 1**—Background review and preparation of work plans.
- **Task 2**—Phase I field investigation and RI Report – soil, surface water, and sediment investigations.
- **Task 3**—Phase II field investigation and supplemental RI.
- **Task 4**—Preparation of FS.

Based on the results of Task 2, the NYSDEC determined that additional surface water, soil, and groundwater sampling be completed prior to completion of the RI report. This RI Report has been prepared as part of Tasks 2 and 3 to discuss field activities, present tables and figures summarizing sample locations and analytical results, and evaluate the potential for impact to public health, as well as the environmental concerns for the Old Ley Creek Channel site. The information obtained during this RI will be used to evaluate and select remedial alternatives to be included in the FS for the Old Ley Creek Channel site.

1.1 SITE HISTORY

The Old Ley Creek Channel site is located west of the intersection of Factory Avenue and Wolf Street (State Route 11) in the town of Salina, Onondaga County, New York. The approximately 3.5-acre site is within an overgrown and wooded area adjacent to the banks of the former Ley Creek Channel between Route 11 and Ley Creek (Figure 1-1). The Old Ley Creek Channel site is approximately 1,350 ft in length and flows from northeast to southwest draining to Ley Creek. The old channel is incised within the unconsolidated overburden suggesting that higher stream flows occur at this location. The base of the Old Ley Creek Channel site appears to be a layer of dense clay or till. In addition, a low swale east of the old channel also collects runoff which appears to slowly seep to the old channel.

Ley Creek, a major tributary to Onondaga Lake, flows from an area east of Syracuse and follows a circuitous path from its headwaters east of the Syracuse International Airport and then west-southwest parallel with Factory Avenue eventually discharging to Onondaga Lake. The creek drains both rural and industrial areas.

The Town of Salina Landfill is located west and northwest of the Old Ley Creek Channel site. The landfill began operations in the 1950s and continued receiving waste into the 1980s (NYSDEC 2009a). The unlined landfill was established in a wetland complex that extended from Onondaga Lake northeast toward the village of Mattydale. During its operation, the landfill received domestic, commercial, and industrial wastes. Hazardous waste, including 640 tons of paint sludge, and 22 tons of waste paint thinner and reducer from the General Motors Fisher Guide Division was disposed of at the landfill. The landfill ceased operations in 1975; however, additional waste was delivered after that time. Closure via a soil cover cap was not completed until 1982. The elevation of the landfill parcel adjacent to the Old Ley Creek Channel site is approximately 14 ft higher in elevation.

During the early-1970s, in an effort to limit flooding in the area, the U.S. Army Corps of Engineers re-routed Ley Creek through the landfill area. The re-routing of the creek separated a fragment of the landfill between the new course of Ley Creek and the Old Ley Creek Channel. This portion of the landfill is referred to as the Town of Salina Landfill parcel in this report. Since the re-routing of Ley Creek, the source of water entering Old Ley Creek Channel has been through a culvert which drains storm water from State Route 11 and through groundwater discharge.

The landfill contains multiple contaminants including polychlorinated biphenyls (PCBs); chlorinated solvents; chlorinated benzenes; benzene, toluene, and xylenes; polyaromatic hydrocarbons, and heavy metals (cadmium, iron, mercury, nickel, and lead). Analysis of surface water, sediment, and groundwater has indicated that contaminants are migrating from the landfill toward Onondaga Lake (NYSDEC 2009a).

Another potential source of impacts is the Solvent and Petroleum Services, Inc. treatment system which discharges to the Old Ley Creek Channel. The design parameters of the system and the discharge permit requirements are unknown. However, analytical results suggest that the treatment system may be responsible for a portion of the impacts in environmental media at the site.

1.2 PURPOSE AND SCOPE

The purpose of this RI is to evaluate existing on-site conditions, possible human and ecological exposure to chemicals of concern, as well as develop a remedial approach to address site impacts. The focus of this RI was to characterize the nature and extent of impacts at the site, while collecting the data necessary to complete a FS for the Old Ley Creek Channel site. Specifically, the objectives of the RI are to:

- Identify possible source area(s) onsite.
- Define source areas and characterize the overall volume and distribution of impacts in environmental media.
- Assess pathways and possible human and ecological exposure to impacted media.

1.3 REPORT ORGANIZATION

This report presents the overall approach and details specific activities that were performed during the RI. Chapter 1 provides a description of the site background including site history, physical characteristics of the site, and a summary of previous investigations. Chapter 2 provides a summary of the procedures and techniques used to complete the field investigation program. Chapter 3 presents a discussion of the findings of the RI. Chapter 4 presents a discussion of the fate and transport of contaminants of concern (COC). Chapter 5 presents the qualitative human and ecological exposure assessment. Chapter 6 provides the fish and wildlife resources impact analysis. Chapter 7 presents recommendations and conclusions based on the available data.

1.4 BACKGROUND

The following section provides a brief discussion of the site background for the Old Ley Creek Channel site.

1.4.1 Site Location

The Old Ley Creek Channel site is located west of the intersection of Factory Avenue and Wolf Street (State Route 11) in the town of Salina, Onondaga County, New York. The approximately 3.5-acre site is within an overgrown and wooded area adjacent to the banks of the former Ley Creek Channel between Route 11 and Ley Creek (Figure 1-1). The area surrounding the site is primarily commercial and industrial. A National Grid right-of-way is located north and west of the site boundary. The right of way is located within the boundary of the Town of Salina Landfill parcel. The Solvents and Petroleum Services, Inc. (SPS) facility is located adjacent to the property along the former Old Ley Creek Channel and Route 11. SPS is a solvent and petroleum product distributor for numerous industries.

1.4.2 Property Information

The subject site is currently unoccupied. The site is the former channel for Ley Creek. Ley Creek was rerouted in the early-1970s, turning the channel into a tributary for the new channel. The site has been used as a disposal area for miscellaneous materials (i.e., tires, scrap metal, furniture). The sources of this material are unknown.

The property is currently owned by Plaza East. The parcel is approximately 3.5-acres and is zoned as commercial (Figure 1-2).

1.4.3 Physiography

The subject site is located on the U.S. Geological Survey West Syracuse, New York 7.5-minute topographic quadrangle map, dated 1978. The topography at the site is irregular having been modified through re-routing of the channel and dumping of waste along the banks of the old channel.

Elevation at the site is approximately 370 ft above mean sea level. The surface water feature as noted on the topographic map is Ley Creek, which is located north and west of the subject site. Ley Creek flows to the west-southwest into Onondaga Lake.

A review of a historic topographic map (U.S. Geological Survey 1947) indicates that the site was formerly a wetland complex which extended from the northeastern shore of Onondaga Lake to just south of the village of Mattydale. The extreme northern portion of this wetland complex was used as the Town of Salina landfill. Landfilling operations appear to have encroached to the banks of the Old Ley Creek Channel. A portion of the wetland which was not covered by waste has been delineated by EA. The U.S. Fish and Wildlife Service has also mapped a wetland that encompasses the Old Ley Creek Channel Site from the edge of the Town of Salina Landfill parcel to a point just east of State Route 11.

1.4.4 Site Geology

A review of the geologic map of New York, Finger Lakes Sheet published by the University of the State of New York, the State Education Department, dated 1970, indicates that bedrock in this area is made up of units of the Vernon Formation which consists of upper Silurian shale and dolostone.

1.4.5 Site Hydrogeology

Based on well logs available from drilling conducted in support of the Town of Salina Landfill, overburden in the vicinity of the Old Ley Creek Channel site consists of waste/fill, clay, silt, and silty clay at the surface with a combination of sand and gravel; and till at depth. Groundwater in the overburden is from 8 to 12 ft below ground surface (bgs). Evaluations of groundwater flow patterns completed as part of the *Well Installation and Sampling Report Town of Salina Landfill* (Clough-Harbor Associates [CHA], 2009) indicates that groundwater flow at the Old Ley Creek Channel site is moving radially toward Ley Creek to the north and west of the Old Ley Creek Channel site.

1.5 PREVIOUS INVESTIGATIONS

No previous investigations have been completed to specifically address impacts at the Old Ley Creek Channel site. However, numerous monitoring wells and borings have been installed as on the Town of Salina Landfill parcel as part of a RI completed for the Town of Salina Landfill. These logs have been used to assist in interpreting the hydrogeologic conditions at the Old Ley Creek Channel site.

1.5.1 Well Installation and Sampling at Town of Salina Landfill, CHA, 2009

A well installation and sampling report was conducted by CHA in 2009 at the Town of Salina Landfill parcel located between the Old Ley Creek Channel and Ley Creek (Appendix A). The investigation included the installation of monitoring wells to assess hydrogeologic conditions

between Ley Creek and Old Ley Creek Channel and water quality in the unconfined aquifer located within the landfill.

Soil borings were completed at the site as part of the investigation using a hollow-stem auger. Soil samples collected were screened for organic vapors using a photoionization detector (PID) in the field and were used to describe site stratigraphy. Soil samples were not analyzed for impacts.

Installed wells were monitored for water quality parameters and groundwater levels. Wells were sampled and samples were sent to CHEMTECH for analysis of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, PCBs, and metals.

Results showed that groundwater flow occurred primarily in the west/northwest direction toward Ley Creek. Groundwater in the area near Old Ley Creek appears to flow north away from Old Ley Creek. Groundwater analytical data from the CHA report suggests that the study area between Old Ley Creek and Ley Creek was not impacted by SVOCs, PCBs, or pesticides, but VOCs were found to be above groundwater standards.

2. FIELD INVESTIGATION

Field investigation activities were conducted in accordance with the RI/FS Work Plan (EA 2009), with the exception of the deviations specifically identified in the following sections. In accordance with the site specific Health and Safety Plan, health and safety officer responsibilities were assigned to one of the team members throughout the field program to ensure that the personnel were protected from both physical and chemical health hazards. Appropriate protective clothing was worn by field personnel while performing all intrusive activities for protection against contamination and to prevent cross-contamination between sample locations and matrices. Sample locations are illustrated on Figure 2-1.

2.1 FIELD ACTIVITIES

The following field activities were completed as part of the field investigation portion of the Work Assignment:

- Surface soil investigation
- Subsurface soil investigation
- Surface water investigation
- Sediment investigation
- Groundwater investigation
- Site survey.

2.2 SURFACE SOIL INVESTIGATION

A surface soil investigation was conducted as part of this RI to evaluate impact to the shallow overburden at the site (0-2 ft bgs). Surface soil samples were collected using a hand-driven slide hammer driving a split-spoon sampling device which included dedicated acetate sleeves for collection of samples. A total of 65 soil samples were collected from 24 sampling locations at the site from 12 to 14 January 2010. An additional 21 samples were collected from seven locations on 26 April 2010. These samples were collected based on the results of the initial surface soil sampling effort. The sample locations were selected in order to provide improved resolution on the extent of impacts to surface soil. Each sampling location was flagged and its location recorded using a high-precision global positioning system (GPS) unit and each location was subsequently surveyed by a licensed surveyor.

As stated in the RI work plan, surface soil samples were collected from 0-6 in. bgs, 6-12 in. bgs, and 12-24 in. bgs at each of the sample locations. A total of 86 soil samples were collected and sent for laboratory analysis. Samples were submitted for VOCs analysis by United States Environmental Protection Agency (USEPA) Method 8260B, SVOCs analysis by USEPA Method 8270C, target analyte list (TAL) metals analysis by USEPA Method 6010, and PCBs and pesticides by USEPA Method 8082/8081A. The soil samples were sent to Mitkem Labs,

Warwick, Rhode Island, which is an approved Environmental Laboratory Approval Program (ELAP)-certified laboratory for VOC, SVOC, TAL metals, PCBs, and pesticides analysis in accordance with the NYSDEC Analytical Services Protocol (ASP).

Surface soil sampling forms are provided in Appendix B.

2.3 SUBSURFACE SOIL INVESTIGATION

A subsurface soil investigation was implemented as part of this RI to evaluate impacts to the overburden unit at the site. A total of 22 soil borings (SB-01, SB-03, SB-04, SB-05, SB-05A, SB-05B, SB-05C, and SB-06 through SB-20) were advanced throughout the study site to a depth of approximately 19 ft bgs. Each of the soil borings were advanced to the top of the till unit. The till unit was encountered from 8 to 19 ft bgs. Each soil boring location was flagged and its location recorded using a high-precision GPS unit and subsequently surveyed by a license surveyor.

The soil borings were completed from 18 to 20 January 2010. During the field effort, soil borings were advanced and sampled using direct-push technologies using a track-mounted drilling rig. Soil samples were collected from each of the 20 soil borings at 2 to 4-ft intervals. Because of elevated PID readings and a strong coal-tar like odor, three additional soil samples were collected in the vicinity of SB-05 from 2 to 4 ft bgs (SB-05A, SB-05B, and SB-05C). These borings were completed surrounding soil boring SB-05 to determine the extent of the potential impacts. SB-05A was collected from a location 10 ft south of SB-05; SB-05B was collected from a location 10 ft west of SB-05; and SB-05C was collected from a location 5 ft southwest of SB-05. Because of the density of utilities in the area, soil boring SB-02 was not completed. Each sub-surface soil sample was collected/composited with bias toward the most impacted interval based on PID screening, color, and odors, etc. Each soil sample was described and logged identifying its geologic characteristics. The Unified Soil Classification System was used to characterize the soil samples. Soil boring logs are provided in Appendix C.

A total of 59 soil samples were collected from the 22 borings and sent for laboratory analysis. Samples were submitted for VOC analysis by USEPA Method 8260B, SVOC analysis by USEPA Method 8270C, TAL metals analysis by USEPA Method 6010, and PCBs and pesticides by USEPA Method 8082/8081A. The soil samples were sent to Mitkem Labs, Warwick, Rhode Island, which is an approved ELAP-certified laboratory for VOC, SVOC, TAL metals, PCBs, and pesticides analysis in accordance with the NYSDEC ASP.

2.4 SURFACE WATER INVESTIGATION

Two rounds of surface water samples were collected as part of this RI. Surface water samples were collected directly from the water body by dipping sampling containers into the water. One sampling event was conducted during a low-flow period and the second during a high-flow period to evaluate differences in the concentrations of analytes during different flow conditions. The low-flow surface water investigation phase was conducted on 14 January 2010 in

conjunction with the sediment investigation. The high-flow sampling event was conducted on 26 January 2010.

Based on the results of the initial sampling effort and at the request of NYSDEC, three additional surface water samples were collected on 24 May 2010.

A total of 17 surface water samples (not including quality assurance [QA]/quality control [QC] samples) were collected from Old Ley Creek Channel and Ley Creek, seven samples during the low-flow sampling event, seven samples during the high-flow sampling event, and three during the Phase II effort. The location of each surface water sample was recorded using a high-precision GPS unit and subsequently surveyed by a licensed surveyor. Samples were collected directly from the surface water body. Prior to sampling, water quality parameters were collected including temperature, Eh, pH, conductivity, oxidation reduction potential, and dissolved oxygen. Surface water sampling forms for each event are provided in Appendix D.

The 17 surface water samples were collected and sent for laboratory analysis. Samples were submitted for VOC analysis by USEPA Method 8260B, SVOC analysis by USEPA Method 8270C, TAL metals analysis by USEPA Method 6010, and PCBs and pesticides by USEPA Method 8082/8081. The surface water samples were sent to Mitkem Labs, Warwick, Rhode Island, which is an approved ELAP-certified laboratory for VOC, SVOC, TAL metals, PCBs, and pesticides analysis in accordance with the NYSDEC ASP.

2.5 SEDIMENT INVESTIGATION

Sediment samples were collected as part of this RI to evaluate potential impacts to sediment at the site. Sediment samples were collected using a split-spoon sampling device with dedicated acetate sleeves driven by a slide hammer. One round of samples were collected on 14 January 2010 during the low-flow surface water sampling event. A total of 14 sediment samples were collected from 8 locations at Old Ley Creek Channel and Ley Creek; the RI work plan stated that 12 would be sampled. However, at four of the locations (SED-07, -08, -09, and -10) there was no sediment (dense till was encountered at these locations). The samples were to be collected from 0 to 6, 6 to 12, and 12 to 24 in. bgs, however, at a number of locations there was not enough sediment thickness to collect samples from each depth. In some instances, recovery for the first interval (0-6 in.) in sediment, was limited to thin muddy sediments predominated by vegetative matter (e.g., sticks, leaves, etc.) and the sampling method (open bottom acetate sleeve) did not allow for collection of sediment suitable for analysis. These locations are noted in the analytical data summary table. The location of each sediment sample was recorded using a high-precision GPS unit and subsequently surveyed by a licensed surveyor.

Low-flow sediment sampling was completed 14 January 2010, in conjunction with the surface water investigation. Samples were collected directly from Old Ley Creek Channel and Ley Creek.

A total of 14 sediment samples were collected from eight locations and sent for laboratory

analysis. Samples were submitted for VOC analysis by USEPA Method 8260B, SVOC analysis by USEPA Method 8270C, TAL metals and mercury analysis by USEPA Method 6010, and PCBs and pesticides by USEPA Method 8082/8081A. Sediment samples were also analyzed for total organic carbon (TOC) by USEPA Method 415.1. The sediment samples were sent to Mitkem Labs, Warwick, Rhode Island, which is an approved ELAP-certified laboratory for VOC, SVOC, TAL metals, PCBs, and pesticides analysis in accordance with the NYSDEC ASP.

2.6 MONITORING WELL INSTALLATION

The monitoring wells were installed on 26 and 27 April 2010 using 4.25-in. hollow-stem augers to depths of approximately 16 to 18 ft bgs with 10 ft of screen. Continuous split-spoon samples were collected to the bottom of each boring. Borings were terminated at the top of the till unit. The samples were described by a geologist and screened with a PID. The monitoring wells were constructed of 2-in. polyvinyl chloride screen and riser. A sand pack was installed around the screen up to 2 ft above the top of the screen. A 2-ft bentonite seal was placed above the sand pack and the remaining annular space was filled with bentonite grout to approximately 0.5 ft below the surface. Steel protective casings and concrete pads were installed to protect each of the monitoring wells. Additional subsurface soil samples were collected at each well location. One sample was collected every 4 ft (below the first 2 ft), or every 2 ft if there was visible staining, odors, or elevated PID readings. A total of nine soil samples were collected from the three monitoring well locations. The soil samples were submitted for VOC analysis by USEPA Method 8260B, SVOC analysis by USEPA Method 8270C, TAL metals and mercury analysis by USEPA Method 6010, and PCBs and pesticides by USEPA Method 8082/8081A.

The newly installed monitoring wells were developed on 7 and 10 May 2010. The wells were developed using surging and pumping techniques. Well development was considered complete when temperature, conductivity, and pH stabilized; and a turbidity of less than 50 nephelometric turbidity units had been achieved. Development water and drill cuttings were drummed, sampled for waste characteristics, and disposed of as non-hazardous waste at an off-site facility by a licensed waste hauler. Waste manifests are included as Appendix E.

2.6.1 Groundwater Sampling

Three groundwater samples and requisite QA/QC samples were collected on 24 May 2010. Groundwater monitoring well sampling procedures included water level measurements, well purging, field measurements, and sample collection at each monitoring well location. A copy of the purging and sampling log forms used to record well purging, water quality measurements, and sampling flow rates is provided in Appendix A. The objective of the groundwater sampling protocol is to obtain samples that are representative of the aquifer in the well vicinity so that analytical results reflect the composition of the groundwater as accurately as possible.

Groundwater samples were collected after 3 well volumes were purged or stabilization of field parameters had been established. The wells were sampled using low-flow sampling techniques.

Groundwater samples were analyzed for target compound list VOCs, SVOCs, pesticides, PCBs (total and dissolved), and TAL metals (total and dissolved).

Field equipment used during groundwater sampling activities included a Horiba U-22 water quality meter with a flow-through cell, which includes probes for measurement of pH, Eh, turbidity, dissolved oxygen, temperature, and conductivity. Additionally, a PID was used to get a headspace reading on the well head during groundwater sampling. Each piece of equipment was checked by the EA Site Manager to be in proper working order before its use and calibrated as required by the manufacturer. Prior to each use, field analytical equipment was decontaminated. After each use, the instrument was checked and stored in an area shielded from weather conditions.

Instruments were calibrated at the beginning of each day of groundwater sampling.

2.7 WETLAND DELINEATION

A wetland delineation was conducted at the Old Ley Creek Channel site on 7 May 2010 in accordance with the NYSDEC Freshwater Wetlands Delineation Manual (NYSDEC 1995). As per the technical criteria outlined, the presence of representative wetland vegetation species was used as the primary indicator of the wetland boundary. A visual assessment of the vegetative composition was conducted and the boundary was flagged and recorded using GPS, and included in the survey of the site. Plant species were identified, recorded, and classified by their respective type (i.e., obligate [OBL], facultative wet [FACW], facultative upland [FACU], etc.). Species classified as OBL and FACW were target species used to determine wetland boundary. Maps of the delineation are provided in Section 3.

2.8 SITE SURVEY

Each sample location was surveyed after installation by Popli Design Group, of Penfield, New York (a New York State licensed surveyor) on 17 May 2010. The surveyor established elevations with respect to benchmarks currently installed at the site. The elevations for each new well location were established on the ground at the base of the well, at each top of casing, and the top of each riser pipe in the casing at a marked measuring point. Each elevation is referenced to the North American Vertical Datum of 1988 (NAVD 88) and reported to the nearest 0.01 ft. A copy of the survey map is provided in Appendix F.

The objective that sample and well locations be within 0.1 ft. was realized through horizontal control being established using GPS methods to record locations with respect to the New York State Plane coordinate system (central zone) and referenced to the North American Datum of 1983 (NAD83). Horizontal points were included in differential level runs between the established benchmarks. The horizontal positional accuracies were found to be within accepted tolerances for this work and points coordinated from them to be within the intended 0.1ft.

3. FIELD INVESTIGATION RESULTS

This chapter presents the findings of the field sampling activities conducted during the RI. Groundwater, surface water, soil, and sediment samples were analyzed for VOCs, SVOCs, pesticide/PCBs, TAL metals, and TOC (sediments only). Analytical methods were performed by an ELAP-certified laboratory. In addition, the laboratories followed the QA/QC, holding time, and reporting requirements as defined in the NYSDEC ASP of June 2000. Analyses were performed by Mitkem Labs, Warwick, Rhode Island, which is an approved ELAP-certified laboratory. Laboratory analytical data are reported using Category B deliverables and the standard electronic data deliverable. Analytical data collected for the RI were validated by Environmental Data Validation, Inc. an independent third party. Analytical data were reviewed for completeness; field and laboratory QC sample results were evaluated; significant laboratory control problems were assessed; and data qualifiers were assigned. The Data Usability Summary Reports are presented in Appendix G.

Standards, criteria, and guidance (SCGs) are promulgated requirements and non-promulgated guidance which govern activities that may affect the environment and are widely used at different stages of an investigation and remediation of a site. The SCGs applicable for the data set collected during this RI are 6 New York Code of Rules and Regulations (NYCRR) Subpart 375-6 Soil Cleanup Objectives, Division of Water Technical and Operational Guidance Series 1.1.1, Technical Guidance for Screening Contaminated Sediments, Freshwater Wetlands Delineation Manual (NYSDEC 1995), Freshwater Wetlands Act Environmental Conservation Law Article 24, 6 NYCRR Parts 663 and 664, and Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Site (NYSDEC, 1994).

3.1 GEOLOGY

A review of the geologic map of New York, Finger Lakes Sheet published by the University of the State of New York, the State Education Department, dated 1970, indicates that bedrock in this area is made up of units of the Vernon Formation which consists of upper Silurian shale and dolostone. During completion of the field activities for this RI, drilling was terminated at the top of the till layer, therefore bedrock was not encountered.

Based on a review of well logs available from drilling conducted in support of the town of Salina landfill, overburden in the vicinity of the Old Ley Creek Channel site consists of clay, silt, and silty clay at the surface with a combinations of silt and clay, silt, sand and gravel, and till at depth. Groundwater in the overburden is from 8 to 19 ft bgs. Well logs completed in support of this RI confirm that the overburden at Old Ley Creek Channel consists of fill, silt and organic material, silt and sand, silt and clay, peat, and till. Cross sections illustrate the nature of the overburden at the site (Figures 3-1 and 3-2). Cross section A-A' runs from northeast to southwest and cross section B-B' runs east to west across the southern portion of the site. Native deposits are overlain by fill material along the edges of the site. It appears that the low spot along Old Ley Creek Channel was used as a dumping area for construction and demolition debris and general waste. The native material varies in thickness across the site from less than a foot

(top soil) to several feet thick (silt and clay and silt and sand). The base of Ley Creek in this vicinity appears to flow over the dense till layer.

3.2 HYDROGEOLOGY

As part of this RI, three new monitoring wells were installed with the purpose of evaluating groundwater quality on the site and, with the inclusion of data groundwater elevation data from the existing monitoring wells from the Town of Salina Landfill, providing water elevation information for evaluating the groundwater flow direction on-site and off-site. Each of the monitoring wells are screened within the shallow groundwater zone. The screened intervals for the new monitoring wells are provided in well logs provided in Appendix H. Groundwater level measurements were taken prior to monitoring well development and groundwater sampling on 10 and 24 May 2010, respectively. Depth to groundwater measurements were recorded from the top of the inner polyvinyl chloride casing using a water level indicator. Groundwater was encountered from 4.31 to 19.7 ft bgs on 10 May 2010 and 4.27 to 20.15 ft bgs on 24 May 2010. Table 3-1 indicates the depth to groundwater and the groundwater elevation at each monitoring well location for each gauging event. The groundwater flow direction based on the groundwater level measurements indicates that groundwater flow is radial from the property between Old Ley Creek Channel and Ley Creek. The old channel and the creek act as groundwater discharge zones. Groundwater within the boundary of the Old Ley Creek Channel site flows from east to west toward the Old Ley Creek Channel. The surface water in Old Ley Creek Channel then flows approximately 1,000 ft south-southwest to Ley Creek and subsequently to Onondaga Lake. Interpreted groundwater elevation surface maps illustrating the direction of groundwater flow for each gauging event are shown in Figures 3-3 and 3-4.

Old Ley Creek Channel and Ley Creek are Class B Streams. The best usage of Class B streams are for primary and secondary contact recreation and fishing. Class B streams are suitable for fish, shellfish, and wildlife propagation and survival. Old Ley Creek Channel is bounded by fill on either side in the northern portion of the site. The fill boundary continues until the channel turns and flows to the west. After the westward turn (after the SPS treatment system outfall), the channel is bounded by fill on its northern bank and native material to the south. The fill has limited the extent of the flood plain for the old channel. In the northern reach, the flood plain is located east of the channel. As the channel turns to the west, the flood plain is on the northern side of the channel. The extreme western portion of the old channel, for approximately the last 350 ft, there is no flood plain on either bank and the channel is incised between the fill to the north and native deposits to the south.

Flow in the upper reach of Old Ley Creek Channel is very slow to marginally stagnant. Water in this area pools and is approximately 2 to 3 ft deep. The standing water area is filled with organic material and waste debris. Due to low surface water velocity, thicker sediment deposits are found in this area. The bulk of the water enters the old channel through a culvert. There are also two seeps located along the eastern boundary of the site which contribute water to the channel. Flow in lower reach of the old channel is more rapid. The base of the channel in this area flows directly on the till unit with little sediment deposition within the channel itself.

3.3 WETLAND DELINEATION

The wetland area within the delineated boundary was approximately 1.14 acres, with dimensions of approximately 1,143.2 ft in length and 43.5-ft wide (Figure 3-5). The wetland area followed the course of the creek in a downward curve from the north of the site in a southwestern direction. Water source begins at the culvert located at the north end of the site and flows southwesterly to the confluence with Ley Creek. Wetland areas were located primarily along the edge of the creek. Historic topographic maps (1947) show the extent of wetland area to be larger than observed. Wetland area may have been lost due to dumping and the diversion of the creek.

The primary FACW species identified within the boundary consisted of highbush blueberry (*Vaccinium corymbosum*), jewelweed (*Impatiens capensis*), and reedgrass (*Phragmites australis*). Ground lilly (*Glechoma hederacea*) was the primary FACU species identified at the boundary. A photo log of plants identified during the delineation is provided in Appendix I. The only OBL species identified was lesser duckweed (*Lemna minor*). Maple (*Acer*) and oak (*Quercus*) species were observed, but were present in upland areas, as well, and so were not used as a primary boundary indicator species. As per the manual, >50 percent of identified species were FACW and 10 percent were OBL, meeting the criteria for hydrophytic vegetation. Since hydrophytic vegetation criteria were met, no hydric soil or hydrologic assessment was conducted.

The United States Fish and Wildlife Service National Wetland Inventory identifies the Old Ley Creek Channel wetland area as Palustrine, Scrub-Shrub, Broad-Leaved Deciduous, Seasonally flooded/saturated (PSS1E). Observation of the site during the delineation showed this to be an accurate description of the wetland area. No areas of stressed vegetation were observed. Primary species identified at the site are common for the Central New York area. No rare, endangered, or endangered species were observed.

3.4 SUBSURFACE SOIL SAMPLING ANALYTICAL RESULTS

A total of 59 soil samples were collected from the 22 borings and sent for laboratory analysis. Samples were submitted for VOC analysis by USEPA Method 8260B, SVOC analysis by USEPA Method 8270C, TAL metals analysis by USEPA Method 6010, and PCBs and pesticides by USEPA Method 8082/8081A. The soil samples were sent to Mitkem Labs, Warwick, Rhode Island, which is an approved ELAP-certified laboratory for VOC, SVOC, TAL metals, PCBs, and pesticides analysis in accordance with the NYSDEC ASP. Because the boundary was modified following completion of the soil borings, soil borings were advanced both inside and outside the final site boundary (Figure 2-1)

Each soil boring was advanced until the till unit was encountered. Subsurface soil samples (2-14 ft bgs) were collected from each of the 39 soil borings except for SB-04- (8-12 ft bgs) and SB-18 (4-8 ft bgs) because of lack of recovery. Because of elevated PID readings and a strong coal-tar like odor, three additional soil samples were collected from 2 to 4 ft bgs in the vicinity of SB-05 (SB-05A, SB-05B, and SB05C). These samples were analyzed for each of the parameters.

The SCGs applied to the subsurface soil sample results were 6 NYCRR Part 375 Environmental Remediation Programs using the Unrestricted Use Soil Cleanup Objectives for Protection of Groundwater. The applicable SCG was applied because the potential source areas on-site would be considered a continuing source for groundwater.

3.4.1 Volatile Organic Compound Analytical Results

Several VOCs were detected at concentrations less than Part 375 Unrestricted Use Soil Cleanup Objectives (Table 3-2). Concentrations of acetone greater than the Part 375 Unrestricted Use SCO of 0.05 mg/kg were identified in a number of samples; however, with the exception of sample SB-12 (8-12 ft [25 mg/kg]) the concentrations are treated as lab contaminants.

3.4.2 Semivolatile Organic Compound Analytical Results

Seven SVOCs were detected in nine subsurface soil samples greater than their respective 6 NYCRR Part 375 Unrestricted SCOs for protection of groundwater. The SVOCs include benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene. Table 3-3 shows the SVOC analytical results. The SVOCs detected were collected from 0 to 14 ft bgs. The locations of the impacted samples suggest that the highest concentrations and broadest types of SVOCs are related to locations where fill was identified in the soil borings or topographic evidence suggests the presence of fill near the sampling location (e.g., steep slopes adjacent to Old Ley Creek Channel). The additional samples collected at SB-05A, SB-05B, and SB-05C did not indicate significant differences in SVOC concentrations when compared with the other samples collected at the site.

Figure 3-6 illustrates the subsurface and surface soil sampling locations where concentrations of SVOCs, metals, and pesticides are greater than their associated SCG.

3.4.3 Target Analyte List Metals and Mercury Analytical Results

Nine TAL metals and mercury were reported at concentrations greater than the Part 375 Unrestricted SCOs including arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc. Table 3-4 presents a summary of the TAL metal and mercury results. Sixteen of the 22 soil sampling locations had concentrations of metals greater than their SCOs.

3.4.4 Polychlorinated Biphenyls and Pesticide Analytical Results

PCBs were reported at concentrations greater than the SCG of 0.1 part per million (ppm) for total PCBs at 17 of the 20 sampling locations. PCBs were detected at various depths below ground surface. Table 3-5 summarizes the analytical results for the subsurface soil samples. PCBs at concentrations greater than the SCO were identified at concentrations that ranged from 0.13 ppm at SB-16 (12-14 ft bgs) to 39 ppm at SB-09 (8-12 ft bgs).

Seven pesticides were identified at concentrations greater than the Part 375 SCO at 12 of the 20 sampling locations, including 4,4'-dichlorodiphenyldichloroethane (4,4'-DDD), 4,4'-dichlorodiphenyldichloroethylene (4,4'-DDE), 4,4'-dichlorodiphenyltrichloroethane (4,4'-DDT), beta-BHC, delta-BHC, endrin, and dieldrin. These pesticides were detected at various depths from 0 to 14 ft bgs. Table 3-6 summarizes the analytical results for the subsurface soil samples. As noted in Table 3-6, other pesticides were identified at the various sampling locations, but at concentrations less than the Part 375 SCOs.

3.5 SURFACE SOIL SAMPLING ANALYTICAL RESULTS

A total of 86 soil samples were collected from the 31 surface soil sampling locations and sent for laboratory analysis. Because of a lack of recovery at locations with saturated soils below grade, samples were not collected and analyzed from sampling location SS-10 (6-12 in. bgs and 12-24 in. bgs), SS-13 (6-12 in. bgs and 12-24 in. bgs), SS-15 (12-24 in. bgs), SS-16 (12-24 in. bgs), and SS-22 (12-24 in. bgs). Because the boundary was modified following completion of the surface soil samples, the samples were collected both inside and outside the final site boundary (Figure 2-1).

The SCGs applied to the surface soil sample results were 6 NYCRR Part 375 Environmental Remediation Programs using the Unrestricted Use Soil Cleanup Objectives for Protection of Groundwater. The applicable SCG was applied because the potential source areas onsite would be considered a continuing source for groundwater.

3.5.1 Volatile Organic Compound Analytical Results

Analytical results indicate that low-level concentrations of VOCs (less than their respective Part 375 Unrestricted SCOs) were detected at numerous sampling locations. Acetone was detected in a single sample at a concentration greater than the Part 375 SCO; however, it is being treated as a potential laboratory contaminant. The VOCs identified include 1,1,1-trichloroethane, 2-butanone, acetone, carbon disulfide, *cis*-1,2-dichloroethene, methylene chloride, tetrachloroethene, and trichloroethene. The analytical results are summarized on Table 3-7.

3.5.2 Semivolatile Organic Compound Analytical Results

Seven SVOCs were detected at 26 surface soil sampling locations at concentrations greater than their respective 6 NYCRR Part 375 Unrestricted SCO for protection of groundwater. The SVOCs include benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and phenol. Table 3-8 shows the SVOC analytical results. The SVOCs detected were detected from 0 to 24 in. bgs.

Figure 3-6 illustrates the sampling locations which had VOC, SVOC, metals, pesticide, and PCB concentrations greater than their associated SCGs.

3.5.3 TAL Metals and Mercury Analytical Results

Nine TAL metals plus mercury were reported at concentrations greater than the Part 375 Unrestricted SCOs, including arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc. Table 3-9 presents a summary of the TAL metal and mercury results. Twenty-seven of the 31 soil sampling locations had concentrations of metals greater than their SCOs.

3.5.4 Polychlorinated Biphenyls and Pesticides Analytical Results

Total PCBs were reported at concentrations greater than the Part 375 Unrestricted SCO of 0.1 ppm for total PCBs at 30 of the 31 sampling locations. PCBs were detected at concentrations greater than the SCO from 0 to 24 in. bgs. Table 3-10 summarizes the analytical results for the surface soil samples. Figures 3-7 to 3-11 illustrate the locations, the depth, and concentrations of PCBs in each sample. PCBs at concentrations greater than the SCO were identified at concentrations that ranged from 0.112 ppm at SS-15 (6-12 in. bgs) to 420 ppm at SS-29 (0-6 in. bgs). The figures illustrate that the extent of PCB impacts decreases with depth, particularly the extent of impacts greater than 50 ppm, suggesting that the bulk of the impacted soil is less than 24 in. bgs.

The volume of soil with PCB impacts greater than 50 ppm from 0 to 24 in. bgs is approximately 1,256 yd³. The volume of soil with PCB impacts between 25 and 50 ppm from 0 to 24 in. bgs is approximately 2,636 yd³. The volume of soil with PCB impacts between 0 and 25 ppm from 0 to 24 in. bgs is approximately 6,022 yd³.

Eighteen pesticides were identified at concentrations greater than the Part 375 SCOs at 30 of the 31 sampling locations. These pesticides were detected at depths from 0 to 24 in. bgs. Table 3-11 summarizes the analytical results for the surface soil samples. As noted in Table 3-11, other pesticides were identified at the various sampling locations, but at concentrations less than the Part 375 SCOs.

3.6 SUMMARY OF SOIL ANALYTICAL RESULTS

The subsurface and surface soil analytical results indicate that soil at the site is impacted by SVOCs, pesticides, PCBs, and metals. Only limited low-level impacts to soils by VOCs were identified. PCB impacts are the most wide spread in both areal and vertical extents. Based on the concentrations of PCBs detected from 0 to 24 in. bgs, PCBs will be used as the basis for determining the extent of impacts at the site. The other contaminants will be evaluated based on the amount of overlap between the locations and depths where they were identified and the locations and depths where PCBs were identified.

Figure 3-6 illustrates the extent of the overlap between PCB impacted soils from 0 to 6 in. bgs, 6-12 in. bgs, and 12-24 in. bgs and the other contaminants identified at the site.

A review of the sampling locations with SVOC, pesticide, and metals impacts greater than the Part 375 SCO from 0 to 6 in. bgs indicates that:

- Six surface soil sampling locations (SS-07, SS-11, SS-14, SS-15, SS-21, and SS-26) are located within the 0-25 ppm PCB boundary
- Six surface soil sampling locations (SS-12, SS-19, SS-20, SS-22, SS-27, and SS-31) are located within the 25-50 ppm PCB boundary
- Twelve surface soil sampling locations (SS-08, SS-10, SS-13, SS-16, SS-17, SS-18, SS-23, SS-24, SS-25, SS-28, SS-29, and SS-30) are located within the >50 ppm boundary.

This suggests that remedial efforts to remove PCB-impacted soil completed in these areas from 0 to 6 in. bgs (e.g., excavation and disposal) would also include removal of soil impacted with SVOCs, pesticides, and metals from this depth.

A review of the sampling locations with SVOC, pesticide, and metals impacts greater than the Part 375 SCO from 6 to 12 in. bgs indicates that:

- Five surface soil sampling locations (SS-07, SS-11, SS-15, SS-21, and SS-26) are located within the 0-25 ppm PCB boundary
- Six surface soil sampling locations (SS-12, SS-19, SS-20, SS-22, SS-27, and SS-31) are located within the 25-50 ppm PCB boundary
- Ten surface soil sampling locations (SS-08, SS-16, SS-17, SS-18, SS-23, SS-24, SS-25, SS-28, SS-29, and SS-30) are located within the >50 ppm boundary.

This suggests that remedial efforts to remove PCB-impacted soil completed in these areas from 6 to 12 in. bgs (e.g., excavation and disposal) would also include removal of soil impacted with SVOCs, pesticides, and metals from this depth.

A review of the sampling locations with SVOC, pesticide, and metals impacts greater than the Part 375 SCO from 12 to 24 in. bgs indicates that:

- Four surface soil sampling locations (SS-07, SS-14, SS-15, and SS-26) are located within the 0-25 ppm PCB boundary
- Five surface soil sampling locations (SS-12, SS-20, SS-22, SS-27, and SS-31) are located within the 25-50 ppm PCB boundary
- Nine surface soil sampling locations (SS-08, SS-17, SS-18, SS-23, SS-24, SS-25, SS-28, SS-29, and SS-30) are located within the >50 ppm boundary.

This suggests that remedial efforts to remove PCB-impacted soil completed in these areas from 12 to 24 in. bgs (e.g., excavation and disposal) would also include removal of soil impacted with SVOCs, pesticides, and metals from this depth.

3.7 SEDIMENT SAMPLING ANALYTICAL RESULTS

A total of 14 sediment samples were collected from eight sediment sampling locations and sent for laboratory analysis. Because of the nature of the bottom of Ley Creek (portions of the creek flow over dense till with no sediment present, only 8 of the original 12 sediment samples were collected. The work plan stated that sediment samples would be collected from 0 to 6, 6-12 and 12-24 in. bgs; however, at a number of locations there was not enough sediment thickness to collect samples from each depth. In some instances, recovery for the first interval (0-6 in.) in sediment, was limited to thin muddy sediments predominated by vegetative matter (e.g., sticks, leaves, etc.) and the sampling method (open bottom acetate sleeve) did not allow for collection of sediment suitable for analysis.

The samples were submitted for VOC analysis by USEPA Method 8260B, SVOC analysis by USEPA Method 8270C, TAL metals analysis by USEPA Method 6010, and PCBs and pesticides by USEPA Method 8082/8081A.

Sediment sampling results were compared with standards developed from Technical Guidance for Screening Contaminated Sediments (NYSDEC 1999). Sediment criteria for non-polar organic compounds were developed using equilibrium partitioning methodology. Non-polar organic compounds tend to be hydrophobic (have low solubility in water). Low solubility compounds, such as pesticides and PCBs, persist in the environment and may bioaccumulate resulting in chronic toxicity effects to organisms.

Equilibrium partitioning uses various factors to determine the potential concentration of these persistent contaminants in interstitial pore water. The factors evaluated include the concentration of the contaminant in the sediment, the concentration of total organic carbon (TOC) in the sediment, and the affinity of the contaminant for organic carbon in the sediment. The organic carbon content of a sediment accounts for the largest variation in the uptake or sorption of a contaminant by sediment. The organic carbon/water partitioning coefficient (K_{oc}) is a measure of the concentration of a contaminant that adsorbs to the organic carbon content of the sediment divided by the concentration dissolved in water. When normalized for organic carbon, concentrations of a contaminant in different sediment samples are comparable (NYSDEC 1999). As such, the guidance values are calculated as a function of the TOC content of the sediment being evaluated. Because the amount of available organic carbon varies spatially, site-specific standards are developed using concentrations of organic carbon analyzed at each site. As part of this investigation, sediment samples were collected at each sampling location and analyzed for TOC. The TOC concentration was then utilized to calculate an average organic carbon concentration, the standard deviation within the data set, the 95 percent confidence limit concentration, and a lower confidence limit concentration value. EA selected the lower confidence limit concentration value as the percent TOC (5 percent) for the derivation of the sediment criteria via equilibrium partitioning methodology. The TOC analytical data is provided in Table 3-12 and sediment criteria guidance values are provided in Table 3-13. This RI has used three criteria for evaluation purposes of the detected analytes, Human Health Bioaccumulation, Benthic Aquatic Life Chronic Toxicity, and Wildlife Bioaccumulation, whichever was the more stringent.

3.7.1 Volatile Organic Compound Analytical Results

Analytical results normalized to TOC indicate that low-level concentrations of VOCs (less than their respective Levels of Protection) were detected at six of the eight sediment sampling locations (SED-01, -02, -03, -04, -05, and -12) (Table 3-14). Each of these locations is within the Old Ley Creek Channel. Vinyl chloride was detected at a concentration greater than the Human Health Bioaccumulation standard of .015 mg/kg at SED-03 (0-6, 6-12, and 12-24 in.) at 4.7, 4.6 and 3.8 mg/kg, respectively. SED-03 is located within the Old Ley Creek Channel approximately 50 ft downstream from the outfall of the SPS treatment system.

SED-06 was collected from a swale which drains into the Old Ley Creek Channel approximately 200 ft west and downstream of the SPS treatment system outfall. A potential source of impacts is the SPS treatment system which discharges to the Old Ley Creek Channel. The design parameters of the system and the discharge permit requirements are unknown. However, analytical results suggest that the treatment system may be responsible for a portion of the impacts to sediment and other environmental media at the site. SED-11 was collected approximately 50 ft upstream from the convergence of the old channel and Ley Creek. No VOCs were identified at either of these locations.

3.7.2 Semivolatile Organic Compound Analytical Results

Analytical results indicate that low-level concentrations (less than their respective Levels of Protection) of 22 SVOCs were detected at each of the eight sediment sampling locations (Table 3-15). Five of the SVOCs detected were at concentrations greater than either the Human Health Bioaccumulation or Benthic Aquatic Life Chronic Toxicity standards. These SVOCs include benzo(a)anthracene, benzo(a)pyrene, fluorene, phenol, and phenanthrene. Combinations of these SVOCs were found at each of the sediment sampling locations. The lowest concentrations were detected at SED-01 and SED-02. These samples were collected from the upper portions of the Old Ley Creek Channel.

3.7.3 Metals and Mercury Analytical Results

Analytical results indicate that concentrations of metals greater than their respective lowest or severe effect levels were detected at each of the eight sediment sampling locations (Table 3-16). Lowest effect levels were exceeded at each sampling location for a combination of the following metals, arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, silver, and zinc. Severe effect levels were exceeded at the following sampling locations SED-01, -02, -03, and -04. The severe effect levels were exceeded for chromium, copper, lead, nickel, silver, and zinc. The sediment samples were collected from locations from up to downstream in the Old Ley Creek Channel.

3.7.4 Polychlorinated Biphenyl and Pesticide Analytical Results

Analytical results indicate that concentrations of total PCBs were detected at four of the eight sediment sampling locations at concentrations greater than Human Health Bioaccumulation criteria

of .0002 mg/kg at SED-01, -02, -03, and -04 from 0 to 24 in. bgs (Table 3-17). Total PCBs were detected at concentrations less than the Human Health Bioaccumulation criteria at SED-05, -06, -11, and -12. Samples SED-01 to SED-04 were collected in the upper portion of the Old Ley Creek Channel where sediments were thicker. Samples SED-05, -06, -11, and -12 were collected along the lower reach of the Old Ley Creek Channel where sediment was thinner. Water movement in the upper reach is very slow to nearly stagnant allowing for additional sediment. Water movement in the lower reach is faster with little stagnation reducing the potential for sedimentation.

Eight pesticides were detected at concentrations greater than Sediment Criteria Benthic Aquatic Wildlife Chronic Toxicity, the Human Health Bioaccumulation, or the Wildlife Bioaccumulation criterion (whichever was more stringent) at each sediment sampling location (Table 3-18). The pesticides included 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, endosulfan I, delta-BHC, gamma-BHC (lindane), gamma-chlordane, and heptachlor.

3.8 SUMMARY OF SEDIMENT ANALYTICAL RESULTS

The sediment analytical results indicate that sediment at the site is impacted by VOCs, SVOCs, pesticides, PCBs, and metals. With the exception of vinyl chloride concentrations greater than Human Health criteria at SED-03 (located immediately downstream of SPS and in an area where VOCs were noted in groundwater on the Town of Salina Landfill parcel) only limited low-level impacts to sediment by VOCs were identified. PCB and pesticide impacts are the most wide spread in both areal and vertical extents. Based on the concentrations of PCB and pesticides detected from 0 to 24 in. bgs, PCBs and pesticides will be used as the basis for determining the extent of impacts at the site. The other contaminants will be evaluated based on the amount of overlap between the locations and depths where they were identified and the locations and depths where PCBs/pesticides were identified.

Figure 3-6 illustrates the extent of the overlap between PCB impacted soils and sediment from 0 to 6 in. bgs, 6 to 12 in. bgs, and 12 to 24 in. bgs; and the other contaminants identified at the site. The bulk of the impacts to sediment are within the 0 to 25 ppm PCB boundary, which includes the upper reach of the Old Ley Creek Channel. Samples SED-03 and SED-04 have concentrations of PCBs greater than 50 ppm from 0 to 6 in. bgs and from 12 to 24 in. bgs, respectively.

A review of the sampling locations with SVOC, pesticide, and metals impacts greater than the Part 375 SCO from 0 to 6 in. bgs indicates that:

- Five sediment sampling locations (SED-01, SED-05, SED-06, SED-11, and SED-12) are located within the 0-25 ppm PCB boundary
- One sediment sampling location (SED-04) is located within the 25-50 ppm PCB boundary
- One sediment sampling location (SED-03) is located within the >50 ppm PCB boundary.

A review of the sampling locations with SVOC, pesticide, and metals impacts greater than the Part 375 SCO from 6 to 12 in. bgs indicates that (due to no sample recovery at SED-05, -06, -11, and -12 from 6 to 24 in. bgs no data are available):

- Four sediment sampling locations (SED-01, SED-02, SED-03, and SED-04) are located within the 0-25 ppm PCB boundary
- No sediment sampling locations are located within the 25-50 ppm PCB boundary
- No sediment sampling locations are located within the >50 ppm PCB boundary.

A review of the sampling locations with SVOC, pesticide, and metals impacts greater than the Part 375 SCO from 12 to 24 in. bgs indicates that (due to no sample recovery at SED-05, -06, -11, and -12 from 6 to 24 in. bgs no data are available):

- Two sediment sampling locations (SED-02 and SED-03) are located within the 0-25 ppm PCB boundary
- One sediment sampling location (SED-01) is located within the 25-50 ppm PCB boundary
- One sediment sampling location (SED-04) is located within the >50 ppm PCB boundary.

This suggests that remedial efforts to remove PCB-impacted soils completed in these areas from 0 to 24 in. bgs (e.g. excavation and disposal) would also include removal of sediments impacted with SVOCs, pesticides, and metals from this depth interval.

3.9 GROUNDWATER SAMPLING ANALYTICAL RESULTS

This section presents a summary of the results for chemical analyses performed on groundwater samples collected from the monitoring well network associated with this RI. For comparing the groundwater results to appropriate SCGs, groundwater results were compared to NYSDEC Ambient Water Quality Standards (AWQS) for Class GA water. Groundwater grab samples were collected from the three new monitoring wells which were screened within the overburden. When discussing groundwater quality, this RI Report is referring to the water bearing zone at depths ranging from approximately 8 to 20 ft bgs.

Groundwater samples were collected during a single sampling event from three monitoring wells OLCCMW-01 to OLCCMW-03. Groundwater samples were collected from each well on 24 May 2010. The groundwater samples were analyzed using USEPA Method 8260 (VOCs), USEPA Method 8270 (SVOCs), USEPA Methods 8082/8081 (PCBs/pest), and USEPA Methods 6010/7470 (TAL metals/mercury).

3.9.1 Volatile Organic Compounds Analytical Results

An estimated concentration of methyl tert butyl ether (MTBE) was identified at monitoring well OLCCMW-02 (3.4J ug/l). There is no Class GA groundwater standard for MTBE. This is the only VOC identified during sampling (Table 3-19).

3.9.2 Semivolatile Organic Compounds Analytical Results

A single SVOC was detected in the groundwater sample collected from OLCCMW-03. An estimated concentration of bis(2-ethylhexyl phthalate) was identified at 4.5J µg/l (Table 3-20). The Class GA groundwater standard for this compound is 5 µg/l. This is a plasticizer commonly found in tubing and supplies used in the collection and analysis of samples, and is considered a potential lab contaminant. The 2009 CHA report identified bis(2-ethyl-hexyl) phthalate as a potential lab contaminant. Two other SVOCs were identified in the report including phenol and 3,4- methylphenol.

3.9.3 Metals and Mercury Analytical Results

Numerous metals were identified in both total and dissolved samples collected from this site (Table 3-21). Total and dissolved samples were collected in order to determine the potential impact turbidity may have on the concentrations of metals (i.e., potential for false positives). Metals identified in the samples include aluminum, antimony, arsenic, barium, calcium, chromium, copper, iron, magnesium, manganese, nickel, potassium, selenium, sodium, vanadium, and zinc. Only antimony, iron, magnesium, manganese, selenium, and sodium were detected at concentrations greater than their Class GA AWQS. Iron, magnesium, manganese, and sodium were also detected during groundwater sampling conducted in support of the Town of Salina Landfill (CHA 2009). The CHA report suggested that concentrations of iron, magnesium, and manganese were potentially related to turbidity or possibly leachate indicators. Groundwater flow patterns and turbidity measurements indicate that the concentrations of these compounds at the Old Ley Creek Channel site are not likely the result of leachate impacts from the landfill or from elevated turbidity.

3.9.4 PCBs and Pesticide Analytical Results

Both total and dissolved groundwater samples were collected from the three monitoring wells for the analysis of PCBs. Groundwater samples were also collected from the three monitoring wells for the analysis of pesticides. Analysis indicates that no PCBs or pesticides were detected in groundwater at the site. This is consistent with the CHA groundwater sampling report (2009).

3.10 SURFACE WATER SAMPLING ANALYTICAL RESULTS

This section presents a summary of the results for chemical analyses performed on surface water samples collected from 10 locations. For comparing the surface water results to appropriate SCGs, the results were compared to NYSDEC AWQS for Class B streams using aquatic chronic (A[C]) guidance values. Pesticides are compared to Class B Stream Human Consumption of

Fish (H[(FC)]) standards. Aquatic chronic standards were established for the protection of aquatic life from chronic effects of different contaminants. Surface water grab samples were collected from the 10 sampling locations. Surface water samples were collected during three sampling events, a low-water event (14 January 2010), a high-water event (26 January 2010), and three additional samples collected during the groundwater sampling effort on 24 May 2010. During each sampling event, water quality parameter data were collected and are provided in Appendix J. The samples were submitted for VOC analysis by USEPA Method 8260B, SVOC analysis by USEPA Method 8270C, TAL metals analysis by USEPA Method 6010, and PCBs and pesticides by USEPA Method 8082/8081A.

3.10.1 Surface Water Volatile and Semivolatile Organic Compound Analytical Results

Seven surface water samples were collected during the 14 January 2010 low-water surface water sampling event. VOC analysis of the samples collected during the low-water sampling indicates that low-level concentrations (less than the Class B A (C) standard) were identified at each of the sampling locations (Table 3-22). The VOCs identified include 1,2,4-trimethylbenzene, acetone, benzene, chloroethane, *cis*-1,2-dichloroethene, m,p-xylene, naphthalene, o-xylene, toluene, trichloroethene, vinyl chloride, and total xylenes. As stated earlier, the SPS treatment system which discharges to the Old Ley Creek Channel is a potential source of impacts to sediment and surface water. The design parameters of the system and the discharge permit requirements are unknown. However, analytical results suggest that the treatment system may be responsible for a portion of the impacts in environmental media at the site.

Seven surface water samples were collected during the 26 January 2010 high-water surface water sampling event. VOC analysis of the samples collected during the high-water sampling indicates that low-level concentrations (less than the Class B A (C) standard) were identified at each of the sampling locations (Table 3-23). The VOCs identified include *cis*-1,2-dichloroethene, m,p-xylene, naphthalene, toluene, and vinyl chloride.

Three surface water samples were collected during the 24 May 2010 sampling event (3-24). VOC analysis of the samples collected during this event indicates that acetone, carbon disulfide, MTBE, benzene, isopropylbenzene, and toluene are at concentrations less than the Class B A(C) surface water standard.

Seven surface water samples were collected during the 14 January 2010 low-water surface water sampling event. SVOC analysis of the samples collected during the low-water sampling indicates that a low-level concentration (1.3 µg/l) of 2-methylnaphthalene (less than the Class B A (C) standard of 4.7 µg/l) was identified at surface water sampling location SW-07 (Table 3-22).

Seven surface water samples were collected during the 26 January 2010 high-water surface water sampling event. SVOC analysis of the samples collected during the high-water sampling indicates that no SVOCs were identified in surface water.

Three surface water samples were collected during the 24 May 2010 sampling event (Table 3-25). Though the initial extraction for SW-10 SVOC analysis was completed within the holding time for the sample, due to non-compliant surrogate recoveries a re-extraction for SVOCs was completed on this sample outside of holding times. SVOC analysis of the samples collected during this event indicates that estimated concentrations of phenol, 4-methylphenol, phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, were detected at SW-10. The concentrations are less than the Class B A(C) surface water standard.

3.10.2 Surface Water Metals and Mercury Analytical Results

Seven surface water samples were collected during the 14 January 2010 low-water surface water sampling event. Metals and mercury analysis of the samples collected during the low-water sampling indicates that concentrations (greater than the Class B A (C) standard) were identified at each of the sampling locations (Table 3-26). The metals identified include aluminum, copper, and iron.

Seven surface water samples were collected during the 26 January 2010 high-water surface water sampling event. Metals and mercury analysis of the samples collected during the low-water sampling indicates that concentrations (greater than the Class B A (C) standard) were identified at each of the sampling locations (Table 3-27). The metals identified include aluminum and iron.

Three surface water samples were collected during the 24 May 2010 sampling event (Table 3-28). Metals and mercury analysis of the samples collected during this event indicate that concentrations of aluminum, chromium, cobalt, copper, iron, lead, mercury, nickel, silver, vanadium, and zinc are greater than the Class B A(C) surface water standard.

3.10.3 Surface Water PCBs and Pesticides Analytical Results

Seven surface water samples were collected during the 14 January 2010 low-water surface water sampling event. PCB and pesticide analysis of the samples collected during the low-water sampling indicated that no PCBs or pesticides were identified at any of the sampling locations. No pesticides were identified during the low-water sampling event.

Seven surface water samples were collected during the 26 January 2010 high-water surface water sampling event. PCB analysis of the samples collected during the high-water sampling indicates that concentrations (greater than the Class B A (C) standard of 1×10^{-6} parts per billion) of a PCB aroclor 1248 were identified at four of the seven sampling locations (Table 3-29). The PCB was identified at sample locations SW-01, SW-02, SW-05, and SW-07. SW-01, SW-02, and SW-07 are located within Old Ley Creek Channel. SW-05 is located just upstream of the confluence of the Old Ley Creek Channel and Ley Creek. No pesticides were identified during the high-water sampling event.

Three surface water samples were collected during the 24 May 2010 sampling event (Table 3-30). PCB and pesticide analysis of the samples collected during this event indicate that

concentrations of either aroclor 1248 or 1254, or both, are greater than the Class B A(C) surface water standard at SW-09 and SW-10. Surface water sampling location SW-09 is a seep located at the base of fill between surface soil sampling locations SS-14 and SS-15. Concentrations of PCB slightly greater than SCOs were identified at SS-14 and SS-15. PCB analysis at soil boring SB-14 identified no PCBs. PCB analysis at soil boring SB-15 indicated concentrations of PCBs at 4-8, 8-12, and 12-14 ft bgs; the highest concentration (28 ppm) was at 8-12 ft bgs. SW-10 is located downstream of the SPS treatment system. Sediment sample SED-03 located immediately downstream from SW-10 had concentrations of PCBs from 0 to 6 in. of 57.4 ppm.

Pesticides were detected in the May 2010 surface water sampling event (Table 3-31). Pesticides are compared to Class B Stream Human Consumption of Fish (H[(FC)]) standard. Heptachlor, heptachlor epoxide, 4,4'-DDE, 4,4'-DDD, and 4,4'-DDT were identified at SW-09 at concentrations greater than their respective Class B H(FC) surface water standards. Concentrations of pesticides were identified at SS-14 and SS-15 including 4,4'-DDT and heptachlor epoxide. Heptachlor and aldrin were identified at SW-10 at concentrations greater than their respective Class B H(FC) surface water standards. Gamma BHC, heptachlor, aldrin, endosulfan sulfate, and gamma chlordane were also identified at SED-03, the nearest sampling location to SW-10. No pesticides were identified at SW-08.

3.11 DATA VALIDATION

The analytical data results were submitted to Nancy J. Potak for validation. This validation included a review of pertinent QA/QC data such as sample extraction and analysis, holding times, calibration, a review of laboratory blanks and QA/QC sample results, and a review of the analytical case narrative. A Data Usability Summary Report was prepared which includes a compliance chart, a list of samples included in each sample delivery group, and recalculations of sample results. Nonconforming QA/QC results were evaluated with respect to their implications for data reliability and usability, and data results were flagged accordingly on the results sheets. These qualifiers were entered into the site-specific database and appear in the summary tables presented in this report. Data Usability Summary Reports for the analytical data packages are provided in Appendix G.

4. FATE AND TRANSPORT

This chapter presents the environmental fate and transport mechanisms for contaminants of concern (COC) identified at the Old Ley Creek Channel site during the RI. The COCs are evaluated to determine the potential for continued on-site presence and off-site migration. The evaluation process assists in the determination of the current and future potential for COC exposure to human populations and the potential technologies that may be appropriate for remediation of the site.

Three main factors are evaluated when assessing a COCs fate and transport in the environment:

- Physiochemical characteristics of individual COCs
- Site environmental characteristics
- Biological interactions.

4.1 CONTAMINANTS OF CONCERN PHYSICOCHEMICAL CHARACTERISTICS

Table 4-1 summarizes the physiochemical characteristics of the COCs identified within the soil and sediment at the Old Ley Creek Channel site that can influence their fate and transport. The COCs identified are compounds that were detected at concentrations greater than their SCOs in either soil or sediment. The specific characteristics are discussed in the following sections.

4.1.1 Water Solubility

Water solubility is the measure of the compounds ability to dissolve in water and is typically expressed in a unit of mass/volume (e.g., mg/L or $\mu\text{g/L}$). Aqueous solubility is one factor that can affect the compounds concentration in water and residence time in water. Compounds showing high water solubility remain in solution while compounds with low solubility tend to remain in a solid state (are hydrophobic). When reviewing Table 4-1, it should be noted that the non-chlorinated alkene acetone has a much higher water solubility (hydrophilic compound) than do the pesticides, PCBs, and SVOCs.

4.1.2 Volatilization

The process of volatilization involves the movement of a compound from the surface of a liquid to the vapor phase. Typically, only the neutral or uncharged form of a compound can volatilize. Volatilization is calculated from the equilibrium vapor pressure which is essentially the solubility of the compound in air (measured as a partial pressure). When measuring a compound's fate in the environment, a more manageable index is the Henry's Law Constant, which defines the ratio of the compound's vapor pressure and water solubility, reported in units of $\text{atm}\cdot\text{m}^3/\text{moles}$. Generally, compounds with a higher Henry's Law Constant (10^{-3}) tend to volatilize more readily than those with lower Henry's Law Constants (10^{-5}).

When evaluating Table 4-1, the non-chlorinated alkene acetone identified at the site would readily volatilize when in contact with air. The other COCs (SVOCs, pesticides, and PCBs) have low Henry's Law Constants which result in lower volatility.

4.1.3 Adsorption/Desorption

Adsorption/desorption represents the degree to which compounds are bound to a solid matrix. Strongly adsorbed compounds are not available for loss processes such as hydrolysis and oxidation, and are not readily transported in the dissolved phase. However, due to the strong affinity in solid matrices, these compounds can be readily transported via particle transport mechanisms (e.g., surface runoff and erosion, suspended sediments in rivers or streams). Partition coefficients are used to quantify adsorption and desorption.

Partition coefficients are concentration ratios of the compound between two phases and include K_{ow} , K_d and K_{oc} ; all have units of L/kg. The K_{ow} is the octanol-water partition coefficient, which quantifies the concentration ratio of the compound in the octanol (organic) phase and aqueous phase. Octanol is used as a substitute for lipids; therefore, the K_{ow} is typically used to relate the compound partitioning from water to biota. The K_d is the concentration ratio of the compound between a solid and aqueous phase at steady-state. The K_d is constant for inorganic analytes (metals), but varies for organic analytes. The latter led to the usage of the K_{oc} , which is the organic carbon-water partition coefficient. The product of the compounds K_{oc} and the organic carbon content of the site soil or sediment is the site specific K_d for the compound. Higher values for K_{ow} , K_d , and K_{oc} indicate a preference of the compound for the non-aqueous phase (low solubility in water).

The SVOCs, pesticides, and PCBs identified at the site (with the exception of acetone) have high K_{ow} and K_{oc} values. These compounds are less mobile (tend to be less soluble in water), but more persistent in the environment.

4.2 SITE ENVIRONMENTAL CHARACTERISTICS

The environmental characteristics of the site can have influence on the fate and transport of the COCs present, and include geology, hydrology, and surface drainage.

4.2.1 Geology

The local geology of the site was detailed in Section 3.1. The depth and composition of the unconsolidated soil in the vadose zone was relatively constant across the site. The thickness of the vadose zone across the site was approximately 0-8-ft thick in most areas. The soil in the vadose zone is typically moist and consists of combinations of clay, silt, and silty clay at the surface. The saturated soil within the shallow aquifer is from 8 to 20 ft bgs terminating at a dense till layer. Soil in the phreatic zone consists of a combination of sand and gravel. The underlying till unit was encountered between 15 and 20 ft bgs at the site. Soil borings completed

in support of the Town of Salina landfill indicate that the till unit is from 15 to 30 ft bgs (CHA 2009). The till is continuous throughout the area.

The Old Ley Creek Channel site lies within Vernon Formation which consists of upper Silurian shale and dolostone.

4.2.2 Hydrogeology

The local hydrogeology was detailed in Section 3.2. The analysis of data collected during this RI focused on the shallow unconfined aquifer. Lateral migration of water through the overburden is through interstitial spaces between the grains and is controlled by hydraulic gradients across the site. Groundwater flow patterns mimic topography of the site, flowing radially from the recharge areas to Ley Creek and Old Ley Creek Channel which act as discharge zones. The CHA report (2009) indicates that groundwater may potentially be recharged by Old Ley Creek Channel in the vicinity of monitoring wells MW-18 and MW-19. The conditions during the sampling and gauging event completed by CHA are unknown (if there was a storm event the old channel may have had surface water elevations greater than the local groundwater elevations resulting in it becoming a losing stream during that time period). Groundwater and surface water conditions during the 24 May 2010 sampling effort indicate that groundwater was discharging to both Ley Creek and Old Ley Creek Channel indicating that the streams were gaining.

4.2.3 Surface Drainage and Topography

Topographic relief (including the area to the west outside of the Old Ley Creek Channel site boundary) varies. The highest elevation in the area is approximately 384 ft above mean sea level (amsl) in the center of Town of Salina Landfill parcel east of Ley Creek. The lowest elevation is 363 ft amsl at the confluence of the Old Ley Creek Channel and Ley Creek, a total relief of 21 ft. Old Ley Creek Channel is bounded by the Town of Salina Landfill parcel to the west and State Route 11 to the east. State Route 11 is approximately 378 ft amsl, the old channel is approximately 367 ft amsl, and the Town of Salina Landfill parcel is approximately 384 ft amsl. It appears that the landfill was constructed in a former wetland that was part of the drainage basin of Old Ley Creek Channel and Ley Creek. A historic topographic map from 1947 identifies a wetland complex west and southwest of Old Ley Creek Channel northwest (Appendix K).

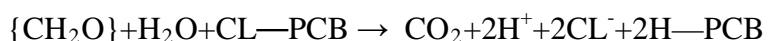
Historically and prior to construction of the new course, Old Ley Creek Channel drained an area east of Syracuse Airport through an industrialized area eventually discharging to Onondaga Lake to the southwest. Old Ley Creek Channel is recharged through a culvert in the northern portion of the site, from groundwater recharge, and precipitation.

4.3 BIOLOGICAL INTERACTIONS

The interactions between COCs and biota present at the Old Ley Creek Channel site may also affect the COCs fate and transport. These interactions are described in the following sections.

4.3.1 Biodegradation

Biodegradation of the COCs can occur and be interceded by both micro-organisms and higher biota. Transformation compounds the by-products of these biodegradations which may or may not be toxic to the organism may be further transformed by other organisms. Biodegradation includes a variety of enzyme-catalyzed oxidation and reduction processes. It has been documented that there is potential for biodegradation of PCBs to occur in sediments by micro-organisms. Investigations have shown that PCBs are susceptible to biodegradation processes, such as environmental dechlorination (i.e., congeners richer in chlorine appear to degrade slowly resulting in a higher number of congeners with fewer chlorine ions). The hypothesis is that the dechlorination is being done through dehalorespiration where organisms use the highly chlorinated PCBs as electron acceptors (Manahan, 2005). A typical degradation process is shown below for PCB, which is a main COC:



Where CL—PCB represents a site of chlorine substitution on a PCB molecule and 2H—PCB represents a site of hydrogen substitution. This process occurs in sediments under anaerobic conditions with long residence times.

4.3.2 Bioconcentration

Bioconcentration is the accumulation of compounds by biota to greater concentrations than present in the aqueous phase. This is quantified using the bioconcentration factor which is the ratio of the compound concentration in the biota and in the water. As stated in Section 4.1.3, bioconcentration factors are typically expressed in units of L/kg and higher values of K_{ow} , K_d , and K_{oc} indicate a preference of the compound for the non-aqueous phase (low solubility in water). The majority of the COCs reported in the on-site subsurface soil typically had high values for K_{ow} , K_d , and K_{oc} which means they would be more persistent in the on-site soil and biota, are hydrophobic, and do not tend to mobilize with the groundwater. Site sediments impacted with PCBs, pesticides, and SVOCs can be mobilized in surface water because of their affinity to adsorb to particulate matter.

4.3.3 Bioaccumulation

Bioaccumulation is the accumulation of compounds by biota from both aqueous phase and dietary phase exposure. The bioaccumulation factor, when related to the aqueous phase concentrations, is larger than the actual bioconcentration factor. No biota samples were taken during this RI to confirm whether the site was serving as a source to compounds accumulating in biota.

4.4 TRANSPORT AND MECHANISMS OF MIGRATION

Based upon the COCs physiochemical characteristics, geology and hydrogeology at the site, and the nature and extent of impacted media, COCs migration may be via several pathways. These pathways included migration of COCs via groundwater (metals only) and through sediment transport in surface water (pesticides and PCBs).

4.4.1 Migration of Emissions from Soil or Groundwater to Air

The COCs identified at the site, with the exception of acetone, have limited volatility; therefore, the migration of emissions from soil or groundwater to air is considered limited. No soil vapor sampling was conducted under this RI.

4.4.2 Migration within the Shallow Groundwater

COCs identified in groundwater at the site include the metals antimony, iron, manganese, and sodium detected at concentrations greater than their Class GA AWQS. No pesticides or PCBs were identified in groundwater samples. A single VOC (an estimated concentration of MTBE) was identified at OLCMW02 and a single SVOC (bis[2-ethyl-hexyl]) phthalate was identified at a concentration less than the AWQS. As such, only metals will be discussed in this section.

The physiochemical characteristics of the metals indicate that they have high water solubility and hence are mobile. Groundwater migration of these COCs would follow groundwater flow patterns.

The groundwater flow patterns for the site indicated that the flow is radial from the Town of Salina Landfill parcel, northwest to southwest toward Ley Creek, and east and south toward Old Ley Creek Channel. Groundwater flow on the Old Ley Creek Channel site is toward the old channel. The flow direction confirms the COCs migration pathway identified from the groundwater samples collected at the site. Because of the limited size of the site and the two parcels being bounded by Ley Creek and Old Ley Creek Channel, the migration pathways of dissolved metals is short with discharge directly to the surface water bodies.

5. QUALITATIVE EXPOSURE ASSESSMENT

This chapter identifies potential current and future human receptors and their associated exposure pathways and provides a qualitative assessment of the potential significance of the exposure pathways as determined by the RI.

5.1 SITE SETTING

The Old Ley Creek Channel site is currently owned by Plaza East, LLC. There are no structures onsite. However, there is unrestricted public access to the site. No human receptors are present at the site. The 3.5 acre site is located on the west side of State Route 11 (Wolf Street) southwest of the intersection of State Route 11 and Factory Avenue. The site is wooded and includes a 1.8-acre wetland designated as a PSS1E by U.S. Fish and Wildlife Service National Wetland Inventory.

5.2 NATURE AND EXTENT OF CHEMICAL CONSTITUENTS

The nature and extent of chemical constituents that are being evaluated under this exposure assessment are limited to the chemicals reported in on-site soils (primary source) and surface water (secondary source). Surface and subsurface soil is considered the source of COC at the site and, as such, was the only on-site media evaluated as part of this RI. Because of the short distance between groundwater recharge and discharge zones, off-site groundwater was not evaluated under this RI. Primary COCs onsite include PCBs, pesticides, SVOCs, and metals. These COCs were reported at levels exceeding the applicable SCGs for surface and subsurface soil, sediment, and surface water, and the protection of groundwater. Because PCBs are the primary COC and they were identified in the broadest areal extent and at depth in the surface and subsurface soils, they will be evaluated extensively in this section. By evaluating, managing, and remediating the PCBs, in this case, it is also possible to manage the other site COCs.

5.3 SELECTION OF CONTAMINANTS OF CONCERN

SVOCs, pesticides, PCBs, and metals were detected in the surface and subsurface soil and surface water media at the Old Ley Creek Channel site. COCs for the site were selected following the practice established by the USEPA in the Risk Assessment Guidance for Superfund Volume I, Part A (USEPA, 1989). The selection criteria were as follows:

- The frequency of detection for chemicals in surface and subsurface soil, sediment, and surface water was utilized to determine COCs. Chemicals with a frequency of detection of less than 5 percent in a data set of 20 or more samples were excluded from this assessment. Also, consideration was given as to whether the detected chemical is related to historic and current uses of the site.
- Chemicals not detected at least once above the limit of detection were automatically excluded from this assessment, regardless of the size of the data set.

A summary list of COCs by medium is provided in Table 5-1. Relevant and appropriate values (i.e., SCGs) for these COCs are discussed in Chapter 3.

This human exposure assessment provides qualitative descriptions of potential exposure to site-related COCs for human populations who may reasonably be expected to contact site media under present or future conditions. This qualitative assessment is comprised of two components:

- Description of exposure setting and identification of potentially exposed populations
- Identification of exposure pathways.

These components are discussed in greater detail in the following sections.

5.4 EXPOSURE SETTING AND IDENTIFICATION OF POTENTIALLY EXPOSED POPULATIONS

This section identifies potential receptors and exposure pathways. A complete exposure pathway is one that meets the following criteria (NYSDEC, 2002; USEPA, 1989):

- A source of COC must be present.
- Release and transport mechanisms and media must be available to move the chemicals from the source medium to an exposure medium.
- An opportunity must exist for receptors to contact the affected media.
- A receptor population and a means for chemical uptake (e.g., ingestion, inhalation) must exist.

Under current and future site use conditions, the potentially exposed populations (i.e., potential receptors) are those that might come into contact with the COCs. Table 5-2 presents the exposure pathway matrix and depicts the various exposure routes for current and future on-site and off-site human populations.

5.4.1 Scenarios

Because the site is currently vacant, on-site human populations considered in this qualitative exposure assessment are on-site trespassers, adult commercial workers, adult and child visitors, and adult construction workers. A complete exposure pathway to surface and subsurface soil, sediment, and surface water at the site is likely for each population identified.

Current off-site human populations considered in this qualitative exposure assessment include adult commercial and industrial workers, adult and child visitors to commercial/industrial establishments, adult construction workers, and adult nearby utility workers. A complete exposure pathway to surface and subsurface soil, sediment, and surface water is likely for each current off-site human population.

5.4.2 Future Scenarios

Future human populations considered in this exposure assessment include on-site and off-site construction workers, nearby off-site utility workers, on-site commercial workers, and on-site adult and child visitors to commercial/industrial establishments.

On-site construction workers are considered since virtually any site redevelopment would involve construction activity in some form. Potential on-site exposure media for construction workers would include surface and subsurface soil, sediment, surface water, and groundwater. While not evaluated as part of this RI, soil particulate in soil ambient air during construction excavation activities may be complete exposure pathways for this population.

Off-site construction work exposure to areas surrounding the site is considered in the event of future off-site redevelopment. Chemical exposure for nearby off-site utility workers could be expected because of the presence of subsurface utility lines in areas adjacent to the site. Potential off-site exposure media of construction workers and nearby off-site utility workers would include surface and subsurface soil, groundwater, surface water, and sediment as analyzed during this RI. In addition, soil particulates in ambient air during construction activities may impact off-site construction workers.

The possibility exists that the site may be used in the future for commercial purposes. Thus, exposure of adult on-site commercial workers and adult and child visitors to future on-site commercial establishments is possible. These individuals may be exposed to surface and subsurface soils, surface water, and sediments exhibiting contamination. It is expected that future land use may be deed restricted to prevent residential development; however, because deed restrictions are not yet in place, a future on-site residential scenario is included in this assessment. Potential on-site exposure media for these future on-site residents and/or workers would include surface and subsurface soil, groundwater, surface water, and sediment.

5.5 IDENTIFICATION OF EXPOSURE PATHWAYS

Table 5-2 provides qualitative descriptions of the potentially complete exposure pathways for current and future on-site and off-site human populations, and anticipates level of exposure potential.

Under current site use conditions, the on-site trespasser may receive exposure to surface subsurface soil, sediment, surface water, and groundwater via ingestion (oral), inhalation, or dermal contact. Current off-site populations may have exposure to surface and subsurface soil, sediment, surface water, and groundwater at the Old Ley Creek Channel site.

Under future site use conditions, on-site adult commercial and industrial workers, on-site construction workers, adult and child visitors, adult and child residents may potentially receive exposure to surface and subsurface soil, sediment, surface water, and groundwater through ingestion and dermal contact; and soil particulate in ambient air through inhalation. There is potential exposure for adult commercial and industrial works, adult and child visitors, adult

construction workers, and nearby off-site utility and construction workers, which may potentially receive exposure to surface and subsurface soil, sediment, surface water, and groundwater through ingestion and dermal contact; and soil particulate in ambient air through inhalation.

5.6 CONCLUSIONS

There are several distinct human populations both on-site and in the vicinity of the site that could potentially be exposed to site-related COCs. Current on-site populations which may be exposed include trespassers. Current off-site populations which may be exposed include adult commercial and industrial workers, adult construction workers, adult and child visitors to commercial/industrial establishments, and adult nearby utility workers. Under future site use conditions, potential populations at risk of exposure include construction and utility workers, commercial/industrial workers, adult and child visitors to future on-site commercial establishments, and adult and child residents. A summary of the potential exposure pathways, by receptor, medium, and potential for exposure are presented in Table 5-2.

The RI and qualitative human exposure assessment have indicated that there are actual and potential pathways through which populations on-site and off-site could be exposed to potentially hazardous materials related to the Old Ley Creek Channel site. The potentially complete exposure pathways should be further evaluated to determine the best course of action to address them. These actions may consist of engineering and/or administrative controls and should be addressed in the development of a Remedial Action Plan for the site.

6. FISH AND WILDLIFE IMPACT ANALYSIS

Following the Appendix 3C Decision Key in the NYSDEC's Fish and Wildlife Resources Impact Analysis guidance document (NYSDEC, 2010), a Fish and Wildlife Resources Impact Analysis was deemed required (Table 6-1). Therefore, the following analysis identifies actual or potential risks to fish and wildlife residing on and in the vicinity of the Old Ley Creek Channel site from compounds potentially migrating from the site. The analysis focuses on risks associated with site-related compounds detected in the surface and subsurface soil, surface water sediment, and groundwater. This analysis contains:

- Site descriptions and a characterization of plant and animal resources and their value to humans.
- Evaluation of potential exposure pathways to fish and wildlife from site-related contaminants of ecological concern (COECs).
- Comparison of concentrations of COECs to regulatory criteria or derived toxicological benchmarks for the protection of fish and wildlife.
- Conclusions regarding the potential of exposure and possible risks to fish and wildlife on and in the vicinity of the site.

6.1 SITE DESCRIPTION

The purpose of this section is to identify the fish and wild life resources that presently exist and that existed before contaminant introduction. Included are figures that illustrate the site topography, cover type, and surface water drainage. In addition, applicable SCGs include 6 NYCRR Subpart 375-6 SCOs, Division of Water Technical and Operational Guidance Series 1.1.1, Technical Guidance for Screening Contaminated Sediments, Freshwater Wetlands Delineation Manual (NYSDEC 1995), Freshwater Wetlands Act Environmental Conservation Law Article 24, 6 NYCRR Parts 663 and 664, and Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Site (NYSDEC 2010).

Figure 6-1 is a topographic map with a radius of 2 mi from the site. The map includes regulated wetlands, streams, and lakes. The New York State Natural Heritage Program only identified red pigweed (*Chenopodium rubrum*) and troublesome sedge (*Carex molesta*), state listed threatened species, within a 2-mi radius of the site. Red pigweed was last documented in 1940 and troublesome sedge was last documented in 1999. The map indicates that the following regulated wetlands, streams, and lakes are identified within the 2-mi radius: Onondaga Lake, Ley Creek, and Beartrap Creek.

Figure 6-2 illustrates major vegetative communities including wetlands, aquatic habitats, NYSDEC significant habitats, areas of special concern within a 0.5 mi radius. The NYSDEC Natural Heritage Program descriptions and classifications are used to identify the cover types.

6.2 CONTAMINANT-SPECIFIC IMPACT ASSESSMENT

The objective of the contaminant-specific impact assessment is to determine the impacts of site-related contaminants on fish and wildlife resources. The impacts are predicted on the contaminants of environmental concern (COECs), the concentrations of contaminants in the media, the exposure of biota to the contaminants, and the toxic effects of the exposures. The impact has to demonstrate that contamination has a minimal impact on resources or, if significant impacts exist, identify the effects of site-related contaminants on the productivity, diversity, biomass, abundance, usability, etc. of fish and wildlife. The following sections, Pathway Analysis, Criteria-Specific Analysis, and Analysis of Toxic Effects will assess the impacts of site-related contaminants on fish and wildlife.

6.2.1 Pathway Analysis

In this section, fish and wildlife resources, COECs, sources of contaminants, and potential pathways of contaminant migration and exposure will be identified.

Fish and wildlife resources are described for the various cover types identified in the following section. The area includes numerous cover types within a 0.5-mi radius and the plants and animals identified in each of the areas, or expected to be found in each of the cover types.

Based upon activities completed onsite and information obtained from the New York Natural Heritage Program Draft Ecological Communities within New York State (NYSDEC, 2002), the following distinct ecological habitat types and wildlife identified and potentially associated with these habitat types were identified within a 0.5-mi radius of the site:

- **Urban structure exterior:** the exterior surfaces of metal, wood, or concrete structures (such as commercial buildings, apartment buildings, houses, bridges) or any structural surface composed of inorganic materials (glass, plastics, etc.) in an urban or densely populated suburban area. These sites may be sparsely vegetated with lichens, mosses, and terrestrial algae; occasionally vascular plants may grow in cracks. Nooks and crannies may provide nesting habitats for birds and insects, and roosting sites for bats. Characteristic birds include common nighthawk (*Chordeiles minor*) on rooftops, American robin (*Turdus migratorius*) on porches or under shelter, and exotic birds such as rock dove (*Columba livia*), European starling (*Sturnus vulgaris*), and house sparrow (*Passer domesticus*).
- **Landfill/dump:** the site appears to have been a wetland complex that has been filled with a variety of waste streams. The bulk of the visible residual material in the landfill or dump is inorganic material (plastic, glass, metal, etc.).
- **Industrial Effluent Stream:** the aquatic community of a stream or a small section of a stream in which the temperature, chemistry, or transparency of the water is significantly modified by discharge of effluent from an industrial, commercial, or sewage treatment plant. The water or sediments may contain elevated concentrations of heavy metals, PCBs, ammonia, and other pollutants. Relative to unpolluted streams of similar

morphology, species richness of fishes is low, and pollution-intolerant species (e.g., lampreys, darters, sculpins) may be absent. Algae indicative of eutrophic conditions and iron fixing bacteria may be abundant.

- **Shrub Swamp:** an inland wetland dominated by tall shrubs that occurs along the shore of a lake or river, in a wet depression or valley not associated with lakes, or as a transition zone between a marsh, fen, or bog and a swamp or upland community. The substrate is usually mineral soil or muck. This is a very broadly defined type that includes several distinct communities and many intermediates. Shrub swamps are very common and quite variable. They may be co-dominated by a mixture of species, or have a single dominant shrub species. The primary facultative wet species identified within the boundary consisted of highbush blueberry (*Vaccinium corymbosum*), jewelweed (*Impatiens capensis*), and reedgrass (*Phragmites australis*). Ground lilly (*Glechoma hederacea*) was the primary facultative upland species identified at the boundary. The obligate species identified was duckweed (*Lemna minor*). This area has been mapped as a palustrine, scrub-shrub, broad-leaved deciduous, seasonally flooded/saturated wetland. Mammal and bird species identified include muskrat (*Ondatra zibethicus*), gray squirrel (*Sciurus carolinensis*), eastern chipmunk (*Tamias striatus*), white tailed deer (*Odocoileus virginianus*), woodchuck (*Marmota monax*), red winged blackbird (*Agelaius phoeniceus*), American robin (*Turdus migratorius*), mourning dove (*Zenaida macroura*), and blue heron (*Ardea herodias*),

The wetland area is recharged from a culvert that daylights from beneath State Route 11 in the northern portion of the site, groundwater, and two seeps located on the eastern and southern boundary of the wetland.

- **Mowed lawn with trees:** residential, recreational, or commercial land in which the ground cover is dominated by clipped grasses and forbs, and it is shaded by at least 30 percent cover of trees. Ornamental and/or native shrubs may be present, usually with less than 50 percent cover. The groundcover is maintained by mowing. Characteristic animals include gray squirrel (*Sciurus carolinensis*), eastern chipmunk (*Tamias striatus*) American robin (*Turdus migratorius*), mourning dove (*Zenaida macroura*), yellow warbler (*Dendroica petechia*), cardinal (*Cardinalis cardinalis*), and mockingbird (*Mimus polyglottos*).
- **Paved road/path:** a road or pathway that is paved with asphalt, concrete, brick, stone, etc. There may be sparse vegetation rooted in cracks in the paved surface.
- **Brushy cleared land:** land that has been clearcut or cleared by brush-hog. There may be a lot of woody debris such as branches and slashings from trees that were logged. Vegetation is patchy, with scattered herbs, shrubs, and tree saplings. The amount of vegetative cover depends on soil fertility and the length of time since the land was cleared.

- **Lacustrine cultural (open water):** communities that are either created and maintained by human activities, or are modified by human influence to such a degree that the trophic state, morphometry, water chemistry, or biological composition of the resident community are substantially different from the character of the lake community as it existed prior to human influence (i.e., Onondaga Lake).
- **Successional northern hardwoods:** a hardwood or mixed forest that occurs on sites that have been cleared or otherwise disturbed. Characteristic trees and shrubs include any of the following: quaking aspen (*Populus tremuloides*), bigtooth aspen (*P. grandidentata*), balsam poplar (*P. balsamifera*), paper birch (*Betula papyrifera*) or gray birch (*B. populifolia*), pin cherry (*Prunus pensylvanica*), black cherry (*P. serotina*), red maple (*Acer rubrum*), white pine (*Pinus strobus*), with lesser amounts of white ash (*Fraxinus americana*), green ash (*F. pensylvanica*), and American elm (*Ulmus americana*). Northern indicators include aspens, birches, and pin cherry. This is a broadly defined community and several seral and regional variants are known. Characteristic birds include yellow warbler (*Dendroica petechia*), cardinal (*Cardinalis cardinalis*), chestnut-sided warbler (*Dendroica pensylvanica*), Nashville warbler (*Vermivora ruficapilla*) in young forests with aspen and birch seedlings, and yellow-bellied sapsucker (*Sphyrapicus varius*) in mature aspen forests.

Observation of Stress

Though obvious signs of landfill activities had occurred at the site (debris piles and residual waste was observed throughout the site) no signs of stress to vegetation and wildlife at or around the site were noted during the field activities undertaken at the site.

Value of Habitat to Associated Fauna

The residential, commercial, and industrial properties are of little value to wildlife. The area surrounding the Old Ley Creek Channel is developed and only isolated areas of vegetation exist within 0.5-mi of the site. The site itself is wooded with 1.1 acres of wetland. Though diversity appears to be low white tailed deer (*Odocoileus virginianus*), great blue heron (*Ardea herodias*), yellow warbler (*Dendroica petechia*), cardinal (*Cardinalis cardinalis*), and woodchuck (*Marmota monax*) were identified at the site. The wildlife expected to occur in the vicinity of the site included urbanized bird and mammalian species such as mockingbird (*Mimus polyglottos*) and gray squirrel (*Sciurus carolinensis*). Due to the limited size of other habitat types in the vicinity of the site, larger mammalian and bird of prey species are not likely to occur.

Value of Resources to Humans

The site and surrounding area is of little value to humans for recreational use or wildlife. Bird feeders may be in residential yards and minimal recreational use of the nearby parks may occur. The developed nature of the area precludes hunting of small game and deer in the vicinity of the site.

6.3 CRITERIA-SPECIFIC ANALYSIS

A criteria-specific analysis presumes the presence of contaminated resources and pathways of migration for site-related contaminants. Where published numerical data for analysis did not exist, then methods described in the appropriate SCGs were used to develop the standard (e.g., use of hardness for metals evaluation and total organic carbon for evaluation of organic compounds in sediment). Because concentrations of PCBs, pesticides, SVOCs, and metals were greater than their respective SCGs in various environmental media analysis of toxic effects is required.

Shallow and subsurface soils, groundwater, surface water, and sediment were analyzed as part of the RI. Primary COECs onsite include various PCBs, pesticides, SVOCs, and metals.

The 3.5-acre site consists of 1.1 acres of wetland. The balance of the site is lightly forested. The COECs identified in environmental media at the site are not expected to impact plants. However, as discussed in Chapter 5, the chemical properties of the compounds identified at the site and the various media they were detected in (surface water, surface soil, subsurface soil, and sediment) makes COECs persistent in the environment and provide a complete exposure pathway for fauna at the site. Pesticides, PCBs, and SVOCs have low water solubilities, low Henry's Law constants, high K_{oc} , and high K_{ow} values which indicate that have an affinity for bonding with soils with available organic carbon, do not readily volatilize, and are more fat soluble than water soluble. These chemical characteristics provide an exposure potential and the media that the COECs were detected in (surface water, groundwater, soil, and sediment) provide contact, ingestion, and inhalation pathways.

6.4 TOXIC EFFECT ANALYSIS

A toxic-effect analysis presumes that fish and wildlife resources have been identified and that the contamination of resources and contaminant pathways exist. Because biota samples were not collected, completion of toxic effects analysis is not possible.

6.5 CONCLUSIONS

Potential pathways for exposure have been identified between surface and subsurface soil, surface water, and sediment for fish and wildlife within the area of the site. As such, remedial activities specifically directed at wildlife exposure are recommended.

7. CONCLUSIONS AND RECOMMENDATIONS

This chapter discusses the conclusions and recommendations of the RI. The chapter provides a summary of the on-site conditions for the Old Ley Creek Channel site, as determined by the completion of the current RI work. This section also presents recommendations for management of the Old Ley Creek Channel site in the immediate future.

7.1 SUMMARY OF IMPACTS AT THE OLD LEY CREEK CHANNEL SITE

The following sections briefly summarize the environmental impacts at the Old Ley Creek Channel site. This section is organized by areas of potential concern for the Old Ley Creek Channel site. Areas of concern and the impacts associated with the environmental media are based on analytical results and their comparison with the appropriate SCGs. Table 7-1 summarizes the degree of impacts of the COPCs and compares the data with the SCGs for the site. As previously stated, this RI is focused on surface and subsurface soils, surface water, groundwater, and sediment.

7.2 VOLATILE ORGANIC COMPOUNDS IN SURFACE AND SUBSURFACE SOILS

- Analytical results from the soil sampling program completed under this RI indicate that VOCs in soil at concentrations greater than SCGs are limited to acetone. Though other VOCs were detected, their concentrations were less than their SCGs. Acetone was detected at several locations and depths ranging in concentration from 0.0011 to 25 ppm (at soil boring SB-12 from 8 to 12 ft bgs). Acetone was identified in groundwater at 10 ppm at monitoring well MW-14 in an area not hydraulically connected to the SB-12 location.
- Due to the undeveloped nature of the site and that it received surface water and sediment, and was used as a dumping site, there is no specific point source or source area identified. There are two adjacent parcels: the Town of Salina Landfill parcel and the SPS property. The landfill is undergoing a subsurface investigation and remediation. Multiple VOCs were identified in groundwater on the landfill parcel immediately adjacent to the Old Ley Creek Channel site. Groundwater from this parcel flows east-southeast toward Old Ley Creek Channel. It is unknown if the SPS property is being evaluated. There is a treatment system located on the southern bank of the Old Ley Creek Channel which appears to discharge to the channel. Groundwater on the eastern side of the old channel flows west-southwest toward the old channel.
- Figure 3-6 shows the overlay of both shallow subsurface and deep subsurface soil areas of concern. The contour lines indicate the ranges of PCB concentrations in soil from the surface to 24 inches below grade. The flags indicate locations where other contaminants in soil and sediment were identified at concentrations greater than their SCGs.

7.3 VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER

- Shallow groundwater analytical results at the Old Ley Creek Channel site identified only MTBE in groundwater at this site. The source of MTBE is unknown.
- Multiple VOCs have been identified in groundwater samples collected from the Town of Salina Landfill parcel immediately west of the old channel. Groundwater in the eastern portion of the parcel flows to the east-southeast toward the old channel where the channel acts as a local discharge zone. The VOCs were identified in monitoring wells MW-14, MW-15, and MW-19 (CHA 2009). Well MW-14 appears to be in a portion of groundwater flow that is toward Ley Creek. Groundwater flow in the area of well MW-15 is likely to be more toward Ley Creek than the old channel and groundwater flow in the area of MW-19 is toward the old channel. The VOCs identified in these wells include the chlorinated compounds 1,1,1-trichloroethane, 1,1-dichloroethane, *cis*-1,2-dichloroethene, and vinyl chloride. The concentrations of these and other compounds were greater than the AWQS. The highest concentrations of these compounds is in the vicinity of MW-14. The fewest number and lowest concentrations of VOCs was identified at MW-19. This suggests that groundwater at the Old Ley Creek Channel site and the Town of Salina Landfill parcel do not co-mingle or mix.

7.4 VOLATILE ORGANIC COMPOUNDS IN SURFACE WATER

- No VOCs were identified in surface water at concentrations greater than the Class B A(C) standard during any of the three surface water sampling events. Concentrations of VOCs were detected during each of the events including 1,2,4-trimethylbenzene, acetone, benzene, carbon disulfide, chloroethane, *cis*-1,2-dichloroethene, MTBE, m,p-xylene, naphthalene, o-xylene, toluene, trichloroethene, vinyl chloride, and total xylenes.

7.5 VOLATILE ORGANIC COMPOUNDS IN SEDIMENT

- Analytical results indicate that low-level concentrations of VOCs (less than their respective levels of protection) were detected at six of the eight sediment sampling locations (SED-01, -02, -03, -04, -05, and -12). Each of these locations is within the Old Ley Creek Channel.
- Vinyl chloride was detected at a concentration greater than the Human Health Bioaccumulation standard of .015 mg/kg at SED-03 (0-6, 6-12, and 12-24 inches) at 4.7, 4.6 and 3.8 mg/kg, respectively. SED-03 is located within the Old Ley Creek Channel approximately 50-ft downstream from the outfall of the SPS treatment system.

7.6 SEMIVOLATILE ORGANIC COMPOUNDS IN SURFACE AND SUBSURFACE SOIL

- Nine SVOCs were detected in surface and subsurface soil samples greater than their respective 6 NYCRR Part 375 Unrestricted Soil Cleanup Objectives for protection of groundwater. The SVOCs detected were collected from 0 to 14 ft bgs.
- Cross sections and topographic evidence suggest that the highest concentrations and broadest types of SVOCs are related to locations where fill was identified in the soil borings or topographic evidence suggests the presence of fill near the sampling location.

7.7 SEMIVOLATILE ORGANIC COMPOUNDS IN GROUNDWATER

- Bis(2-ethylhexyl)phthalate was identified at monitoring well MW-03 at a concentration below the AWQS.

7.8 SEMIVOLATILE ORGANIC COMPOUNDS IN SURFACE WATER

- Concentrations of several SVOCs were identified during the three surface water sampling events including, 2-methylnaphthalene at SW-07, 4-methylphenol, phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, and benzo(g,h,i)perylene at SW-10. These compounds were identified at concentrations less than the AWQS.

7.9 SEMIVOLATILE ORGANIC COMPOUNDS IN SEDIMENT

- Analytical results indicate that low-level concentrations of 22 SVOCs (less than their respective Levels of Protection) were detected at each of the eight sediment sampling locations.
- Five of the SVOCs detected were at concentrations greater than either the Human Health Bioaccumulation or Benthic Aquatic Life Chronic Toxicity standards. These SVOCs include benzo(a)anthracene, benzo(a)pyrene, fluorene, phenol, and phenanthrene. Combinations of these SVOCs were found at each of the sediment sampling locations. The lowest concentrations were detected at SED-01 and SED-02. These samples were collected from the upper portions of the Old Ley Creek Channel.
- The SVOCs detected include, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and phenol. The SVOCs were more wide spread and at higher concentrations at the surface soil sampling locations.

7.10 PESTICIDES IN SURFACE AND SUBSURFACE SOIL

- Seven pesticides were identified at concentrations greater than the Part 375 SCO's at 12 of the 20 sampling locations including 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, beta-BHC, delta-BHC, endrin, and dieldrin. These pesticides were detected at various depths from 0 to 14 ft bgs.
- Other pesticides were identified at the various sampling locations, but at concentrations less than the Part 375 SCO's.

7.11 PESTICIDES IN GROUNDWATER

- Groundwater samples were collected from the three monitoring wells for the analysis of pesticides. Analysis indicates that no pesticides were detected in groundwater at the site. This is consistent with the CHA groundwater sampling report (2009).

7.12 PESTICIDES IN SURFACE WATER

- No pesticides were detected during the high-water and low-water sampling events in January 2010.
- Pesticides were detected in the May 2010 surface water sampling event. Pesticides are compared to Class B Stream Human Consumption of Fish (H[(FC)]) standard. Heptachlor, heptachlor epoxide, 4,4'-DDE, 4,4'-DDD, and 4,4'-DDT were identified at SW-09 at concentrations greater than their respective Class B H(FC) surface water standards.
- Concentrations of pesticides were identified at SS-14 and SS-15 (which are adjacent to SW-09 sampling location) including 4,4'-DDT and heptachlor epoxide.
- Heptachlor and aldrin were identified at SW-10 at concentrations greater than their respective Class B H(FC) surface water standards. Gamma BHC, heptachlor, aldrin, endosulfan sulfate, and gamma chlordane were also identified at SED-03, the nearest sampling location to SW-10.
- No pesticides were identified at SW-08.

7.13 PESTICIDES IN SEDIMENT

- Eight pesticides were detected at concentrations greater than Sediment Criteria Benthic Aquatic Wildlife Chronic Toxicity, the Human Health Bioaccumulation, or the Wildlife Bioaccumulation criterion (whichever was more stringent) at each sediment sampling location. The pesticides included, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, endosulfan I, delta-BHC, gamma-BHC (lindane), gamma-chlordane, and heptachlor.

7.14 PCBS IN SURFACE AND SUBSURFACE SOIL

- PCBs are the most abundant organic compound identified at the site. PCBs were identified at concentrations greater than the SCO in 133 of 154 soil samples, or 47 of 53 soil sampling locations. Concentrations ranged from 0.042 to 440 mg/kg.
- The volume of surface soil from 0 to 24 in. bgs that has a concentration of PCBs greater than 50 mg/kg is 1,256 yd³ (approximately 1,885 tons).
- The volume of surface soil from 0 to 24 in. bgs that has a concentration of PCBs between 25 and 50 mg/kg is 2,636 yd³ (approximately 3,955 tons).
- The volume of surface soil from 0 to 24 in. bgs that has a concentration of PCBs between 0 and 25 mg/kg is 6,022 yd³ (approximately 9,033 tons).

7.15 PCBS IN GROUNDWATER

- Total and dissolved groundwater samples were collected from the three monitoring wells for the analysis of PCBs. Analysis indicates that no PCBs were detected in groundwater at the site. This is consistent with the CHA groundwater sampling report (2009).

7.16 PCBS IN SURFACE WATER

- Seventeen surface water samples were collected during three different events at the site. The events included low-water and high-water sampling and collection of surface water samples from a culvert and two seeps which discharge to the old channel during the third event.
- Seven surface water samples were collected during the 14 January 2010 low-water surface water sampling event. PCB analysis of the samples collected during the low-water sampling indicated that no PCBs were identified at any of the sampling locations.
- Seven surface water samples were collected during the 26 January 2010 high-water surface water sampling event. PCB analysis of the samples collected during the high-water sampling indicates that concentrations (greater than the Class B A (C) standard of 1×10^{-6} parts per billion) of a PCB aroclor 1248 were identified at four of the seven sampling locations. The PCB was identified at sample locations SW-01, SW-02, SW-05, and SW-07. SW-01, SW-02, and SW-07 are located within the Old Ley Creek Channel. SW-05 is located just upstream of the confluence of the old channel and Ley Creek. No pesticides were identified during the high-water sampling event.
- Three surface water samples were collected during the 24 May 2010 sampling event. PCB analysis of the samples collected during this event indicates that concentrations of either aroclor 1248 or 1254, or both, are greater than the Class B A(C) surface water

standard at SW-09 and SW-10. Surface water sampling location SW-09 is a seep located at the base of fill between surface soil sampling locations SS-14 and SS-15.

Concentrations of PCBs slightly greater than SCOs were identified at SS-14 and SS-15. PCB analysis at soil boring SB-14 identified no PCBs. PCB analysis at soil boring SB-15 indicated concentrations of PCBs at 4-8, 8-12, and 12-14 ft bgs, the highest concentration (28 ppm) at 8-12 ft bgs. SW-10 is located downstream of the SPS treatment system. Sediment sample SED-03 located immediately downstream from SW-10 had concentrations of PCBs from 0 to 6 in. of 57.4 ppm.

7.17 **PCBS IN SEDIMENT**

- PCBs at concentrations greater than the SCG were identified in 10 of 14 sediment samples. PCBs were identified in 4 of the 8 sediment sampling locations.
- Analytical results indicate that concentrations of total PCBs were detected at concentrations greater than the Human Health Bioaccumulation criteria of .0002 mg/kg at SED-01, -02, -03, and -04 from 0 to 24 in. bgs (Table 3-x).
- Total PCBs were detected at concentrations less than the Human Health Bioaccumulation criteria at SED-05, -06, -11, and -12.
- Samples SED-01 to SED-04 were collected in the upper portion of the old channel where sediments were thicker. Samples SED-05, -06, -11, and -12 were collected along the lower reach of the old channel where sediment was thinner.
- Water movement in the upper reach is very slow to nearly stagnant allowing for additional sediment. Water movement in the lower reach is faster with little stagnation reducing the potential for sedimentation.

7.18 **METALS IN SURFACE AND SUBSURFACE SOIL**

- Nine TAL metals plus mercury were reported at concentrations greater than the Part 375 Unrestricted SCOs at surface soil sampling locations including arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc. Twenty-seven of the 31 surface soil sampling locations had concentrations of metals greater than their SCOs.
- Nine TAL metals and mercury were reported at concentrations greater than the Part 375 Unrestricted Soil Cleanup Objectives in subsurface soil including arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc. Sixteen of the 22 subsurface soil sampling locations had concentrations of metals greater than their SCOs.

7.19 METALS IN GROUNDWATER

- Numerous metals were identified in both total and dissolved samples collected from this site. Metals identified in the samples include aluminum, antimony, arsenic, barium, calcium, chromium, copper, iron, magnesium, manganese, nickel, potassium, selenium, sodium, vanadium, and zinc.
- Antimony, iron, magnesium, manganese, selenium, and sodium were detected at concentrations greater than their Class GA AWQS.
- Iron, magnesium, manganese, and sodium were also detected during groundwater sampling conducted in support of the Town of Salina Landfill (CHA 2009). The CHA report suggested that concentrations of iron, magnesium, and manganese were potentially related to turbidity or possibly leachate indicators.
- Groundwater flow patterns and turbidity measurements indicate that the concentrations of these compounds at the Old Ley Creek Channel site are not likely the result of leachate impacts from the landfill or from elevated turbidity.

7.20 METALS IN SURFACE WATER

- Seven surface water samples were collected during the 14 January 2010 low-water surface water sampling event. Metals and mercury analysis of the samples collected during the low-water sampling indicates that concentrations (greater than the Class B A (C) standard) were identified at each of the sampling locations. The metals identified include aluminum, copper, and iron.
- Seven surface water samples were collected during the 26 January 2010 high-water surface water sampling event. Metals and mercury analysis of the samples collected during the low-water sampling indicates that concentrations (greater than the Class B A (C) standard) were identified at each of the sampling locations. The metals identified include aluminum and iron.
- Three surface water samples were collected during the 24 May 2010 sampling event. Metals and mercury analysis of the samples collected during this event indicates that concentrations of aluminum, chromium, cobalt, copper, iron, lead, mercury, nickel, silver, vanadium, and zinc are greater than the Class B A(C) surface water standard.

7.21 METALS IN SEDIMENTS

- Analytical results indicate that concentrations of metals greater than their respective lowest or severe effect levels were detected at each of the eight sediment sampling locations.

- Lowest effect levels were exceeded at each sampling location for a combination of the following metals, arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, silver, and zinc.
- Severe effect levels were exceeded at the following sampling locations SED-01, -02, -03, and -04. The severe effect levels were exceeded for chromium, copper, lead, nickel, silver, and zinc.
- The sediment samples were collected from locations from up to downstream in the Old Ley Creek Channel. Each of these metals was also detected in surrounding surface and subsurface soil sampling locations at concentrations greater than their respective SCGs.

7.22 CURRENT CONCEPTUAL SITE MODEL

A conceptual site model provides the framework for identifying and quantifying known and unknown chemicals of concern in the environment at a site. Based on the data collected during this RI, the previous investigations performed at the Town of Salina Landfill, the following narrative outlines the conceptual site model.

Several factors have resulted to impacts to environmental media at the Old Ley Creek Channel site. Historical land-filling activities from the 1950s through the 1970s at the Town of Salina Landfill are one of the potential sources of impacts to the area. Topographic and soil boring evidence places the landfill along the western bank of the old channel along its entire extent. Analytical results in groundwater collected on the Town of Salina Landfill parcel adjacent to the Old Ley Creek Channel site indicate that VOCs are impacting groundwater from waste located in this area. Historically, there is documented disposal of hazardous waste from the General Motors Fisher Guide Division. The waste included paint sludge and waste paint thinner and reducer. Other wastes were also disposed of in the landfill resulting in releases of PCBs, heavy metals, and other organic compounds into the environment downgradient of the landfill. Soil, groundwater, surface water, and sediment have each been impacted.

Ley Creek drains a variety of different areas from its headwaters to Onondaga Lake including residential, rural, recreational, and industrial areas. The cumulative effect of activities in these areas and the migration of sediments and impacted surface water from upstream to downstream has likely resulted in impacts from a variety of activities. The analytical results collected during completion of this RI confirmed that soil, surface water, groundwater, and sediment have been impacted by disposal activities at the site and the migration of contaminants to the site through natural processes.

A third potential source of impacts is the SPS treatment system which discharges to the Old Ley Creek Channel. The design parameters of the system and the discharge permit requirements are unknown. However, analytical results suggest that the treatment system may be responsible for a portion of the impacts in environmental media at the site.

Though additional confirmatory sampling may be required for surface water, the media sampling that has been conducted to date appears to be adequate for determining the nature and extent of impacts at the site. The focus of this investigation has been the extent of PCB impacts to soil and sediment in the area, the idea being that because of the extent of the PCB impacts (See figures 3-6 through 3-11), if the site is managed based on PCB impacts, the other contaminants in surface water, sediment, and groundwater will also be addressed.

7.23 RECOMMENDATIONS

7.23.1 Groundwater

- The impacts to groundwater at the site monitoring wells were limited with respect to VOCs, SVOCs, metals, pesticides, and PCBs. No additional groundwater sampling appears to be required. The monitoring wells should remain in place in order to be used for gauging purposes.
- The extent of groundwater impacts associated with the Town of Salina Landfill wells was notable for VOCs. Gauging at the landfill should include gauging of the Old Ley Creek Channel monitoring wells to further refine groundwater flow patterns in the area.

7.23.2 Surface Water

- PCBs were identified in surface water during two of the sampling rounds at concentrations greater than the surface water guidelines. Other contaminants, while present, were of a limited concern.
- Additional surface water sampling should be completed upstream of the site and included in the sampling for the landfill as well.

7.23.3 Soil

- PCBs were identified in site soils from the surface to several feet below grade, the highest concentrations being within the first 2 ft.
- There is unrestricted public access to the site. The exposure pathway for humans and wildlife is complete for surface soils. The analytical data suggests that an interim remedial measure (IRM) be conducted to remove highly impacted surface soil from the area, removing the potential for exposure to PCBs and other contaminants identified in the soil.
- Removing impacted soil through an IRM based on the extent of PCBs will also remove other contaminants limiting exposure to them as well.

7.23.4 Sediment

- PCBs were identified in site sediment from the surface to 2 ft below grade.
- There is unrestricted public access to the site. The exposure pathway for humans and wildlife is complete for sediment. As noted above, the analytical data suggests that an IRM removing surface soil be conducted to remove highly impacted surface soil from the area. During completion of the IRM, it is recommended that sediment in the Old Ley Creek Channel also be excavated and treated or disposed of properly.
- To identify the extent of the impacted sediment, it is recommended that additional sediment samples be collected in the old channel.

7.24 PERFORM AN IRM

- Based on the site data collected during this RI, EA recommends that completion of an IRM with the intent of removing impacted soil and sediment from Old Ley Creek Channel site be completed.
- The IRM could potentially be completed in conjunction with the completion of excavation to place the fragment of the Town of Salina Landfill within the boundaries of the former landfill west of Ley Creek.
- It is assumed that due to the high concentrations of PCBs (greater than 50 mg/kg) in on-site soils and sediments, portions of the soil and sediment could not be placed within the boundaries of the former landfill and would have to be disposed of as hazardous waste.

8. REFERENCES

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TABLE 3-1 GROUNDWATER ELEVATION DATA

10 MAY 2010						
Monitoring Well Identification	Ground Elevation (ft AMSL)	Top of Casing Elevation (ft AMSL)	Top of Riser Elevation (ft AMSL)	Depth to Groundwater (ft btoc)	Depth to Well Bottom (ft btoc)	Groundwater Table Elevation (ft AMSL)
OLC-MW-1	377.0	379.16	378.87	9.88	20.32	368.99
OLC-MW-2	374.8	377.07	376.86	6.21	20.30	370.65
OLC-MW-3	370.3	372.63	372.40	4.31	18.12	368.09
MW-6	374.09	377.41	377.19	10.44	20.50	366.75
MW-7	384.36	387.57	387.32	19.70	30.50	367.62
MW-13	368.6	370.93	370.58	6.11	15.21	364.47
MW-14	382.8	385.13	384.42	19.02	30.31	365.40
MW-15	382.3	384.63	384.21	15.83	25.26	368.38
MW-16	379.5	381.91	381.58	13.56	25.50	368.02
MW-17	371.5	375.35	374.73	8.25	17.54	366.48
MW-18	371.4	374.66	374.31	7.05	15.24	367.26
MW-19	368	371.39	370.89	3.98	14.75	366.91
24 MAY 2010						
Monitoring Well Identification	Ground Elevation (ft AMSL)	Top of Casing Elevation (ft AMSL)	Top of Riser/Gauge Elevation (ft AMSL)	Depth to Groundwater (ft btoc)	Depth to Well Bottom (ft btoc)	Groundwater Table Elevation (ft AMSL)
OLC-MW-1	377.0	379.16	378.87	10.02	20.32	368.85
OLC-MW-2	374.8	377.07	376.86	6.73	20.30	370.13
OLC-MW-3	370.3	372.63	372.40	4.64	18.12	367.76
MW-6	374.09	377.41	377.19	13.07	20.50	364.12
MW-7	384.36	387.57	387.32	20.15	30.50	367.17
MW-13	368.6	370.93	370.58	6.47	15.21	364.11
MW-14	382.8	385.13	384.42	19.34	30.31	365.08
MW-15	382.3	384.63	384.21	16.81	25.26	367.40
MW-16	379.5	381.91	381.58	13.07	25.50	368.51
MW-17	371.5	375.35	374.73	9.40	17.54	365.33
MW-18	371.4	374.66	374.31	7.56	15.24	366.75
MW-19	368	371.39	370.89	4.27	14.75	366.62
SWE-1			366.48	2.64		363.84
SWE-2			368.64	1.85		366.79
SG-1			367.47	3.27		364.20
SG-2			365.85	2.56		363.29
NOTE: AMSL = Above mean sea level. btoc = Below top of casing Horizontal Datum New York State Plane LI 3104 1983/96 Vertical Datum NAVD 1988						

TABLE 3-2 VOLATILE ORGANIC COMPOUND DETECTIONS IN SUBSURFACE SOIL

Parameter List USEPA Method 8260	Sample Location	SB-01						SB-03						SB-04						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (ft)	4-8		8-12		12-14		4-8		8-12		12-14		4-8		8-12		12-14		
	Sample Date	1/19/2010						1/19/2010						1/19/2010						
	Sample Type	Composite						Composite						Composite						
1,1-Dichloroethane	mg/kg		U		U		U		UJ		UJ		UJ		U	NR			U	0.27
1,2,4-Trimethylbenzene	mg/kg		U		U		U		UJ		UJ		UJ		U	NR			U	3.6
2-Butanone	mg/kg		U		U		U		UJ	0.022	J		UJ	0.02		NR		0.018		---
4-Isopropyltoluene	mg/kg		U		U		U		UJ		UJ		UJ		U	NR			U	---
Acetone	mg/kg		U		U		U		UJ	0.1	J	0.021	J	0.079		NR		0.11		0.05
Carbon disulfide	mg/kg		U		U		U		UJ		UJ	0.0035	J		U	NR			U	---
Chloroethane	mg/kg		U		U		U		UJ		UJ		UJ		U	NR			U	---
Chloroform	mg/kg		U		U		U		U		U		U		U			U		0.37
cis-1,2-Dichloroethene	mg/kg		U		U		U		UJ		UJ		UJ		U	NR			U	0.25
Methylene chloride	mg/kg		U		U		U		UJ		UJ		UJ		U	NR			U	0.05
Naphthalene	mg/kg	0.0088			U		U		UJ		UJ		UJ		U	NR			U	---
Tetrachloroethene	mg/kg		U		U		U		UJ		UJ		UJ		U	NR			U	1.3
Toluene	mg/kg		U		U		U		U		U		U		U			U		0.7
Vinyl chloride	mg/kg		U		U		U		UJ		UJ		UJ		U	NR			U	0.02

Parameter List USEPA Method 8260	Sample Location	SB-05						SB-05A		SB-05B		SB-05C		Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)					
	Sample Depth (ft)	0-4		4-8		8-12		12-14		2-4		2-4			2-4				
	Sample Date	1/19/2010						1/19/2010											
	Sample Type	Composite						Composite											
1,1-Dichloroethane	mg/kg		U		UJ		UJ		U		U		U		U		U		0.27
1,2,4-Trimethylbenzene	mg/kg	0.0015	J		UJ		UJ		U		U		U		U		U		3.6
2-Butanone	mg/kg				UJ		UJ	0.014			U		U		U		U		---
4-Isopropyltoluene	mg/kg		U		UJ		UJ		U		U		U		U		U		---
Acetone	mg/kg		U		UJ	0.0071	J	0.066			U		U		U		U		0.05
Carbon disulfide	mg/kg		U		UJ		UJ		U		U		U		U		U		---
Chloroethane	mg/kg		U		UJ		UJ		U		U		U		U		U		---
Chloroform	mg/kg		U		U		U		U		U		U		U		U		0.37
cis-1,2-Dichloroethene	mg/kg		U		UJ		UJ		U		U		U		U		U		0.25
Methylene chloride	mg/kg		U		UJ		UJ		U		U		U		U		U		0.05
Naphthalene	mg/kg	0.053			UJ		UJ	0.0026	J		U		U		U		U		---
Tetrachloroethene	mg/kg		U		UJ		UJ		U		U		U		U		U		1.3
Toluene	mg/kg		U		U		U		U		U		U		U		U		0.7
Vinyl chloride	mg/kg		U		UJ		UJ		U		U		U		U		U		0.02

NOTE: USEPA = United States Environmental Protection Agency.

ppm = Parts per million.

mg/kg = Milligrams per kilogram.

U = Compound was analyzed for, but not detected.

J = Estimated value.

NR = No Recovery.

Bold values indicate exceedence of standard.

Standards taken from Part 375 Unrestricted Soil Cleanup Objectives.

TABLE 3-2 VOLATILE ORGANIC COMPOUND DETECTIONS IN SUBSURFACE SOIL

Parameter List USEPA Method 8260	Sample Location	SB-06				SB-07				SB-08				Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)						
	Sample Depth (ft)	4-8		8-12	12-14	4-8	8-12		12-14	4-8	8-12		12-14							
	Sample Date	1/19/2010				1/18/2010				1/18/2010										
	Sample Type	Composite				Composite				Composite										
1,1-Dichloroethane	mg/kg		UJ		UJ		UJ		UJ		U		U		U	0.27				
1,2,4-Trimethylbenzene	mg/kg		UJ		UJ		UJ		UJ		U		U		U	3.6				
2-Butanone	mg/kg		UJ		UJ		UJ	0.053	J		UJ		U		U	---				
4-Isopropyltoluene	mg/kg		UJ		UJ		UJ		UJ		U		U		U	---				
Acetone	mg/kg	0.042	J		UJ		UJ	0.22	J	0.026	J	0.018		0.033	0.033	0.0085	0.05			
Carbon disulfide	mg/kg		UJ		UJ		UJ		UJ	0.006	J	0.0046	J		U	0.0031	J	0.0014	J	---
Chloroethane	mg/kg		UJ		UJ		UJ		UJ		UJ		U		U		U		U	---
Chloroform	mg/kg		U		U		U		U		U		U		U		U		U	0.37
cis-1,2-Dichloroethene	mg/kg		UJ		UJ		UJ		UJ		UJ		U		U		U		U	0.25
Methylene chloride	mg/kg		UJ		UJ		UJ		UJ		UJ		U		U		U		U	0.05
Naphthalene	mg/kg		UJ		UJ		UJ		UJ		UJ		U		U		U		U	---
Tetrachloroethene	mg/kg		UJ		UJ		UJ		UJ		UJ		U		U		U		U	1.3
Toluene	mg/kg		U		U		U		U		U		U		U		U		U	0.7
Vinyl chloride	mg/kg		UJ		UJ		UJ		UJ		UJ		U		U		U		U	0.02
Parameter List USEPA Method 8260	Sample Location	SB-09				SB-10				SB-11				Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)						
	Sample Depth (ft)	4-8	8-12		12-14	4-8	8-12		12-14	4-8	8-12		12-14							
	Sample Date	1/19/2010				1/18/2010				1/18/2010										
	Sample Type	Composite				Composite				Composite										
1,1-Dichloroethane	mg/kg		UJ		UJ		UJ		U		U		U		U		U		U	0.27
1,2,4-Trimethylbenzene	mg/kg		UJ		UJ		UJ		U		U		U		U		U		U	3.6
2-Butanone	mg/kg		UJ		UJ		UJ		UJ	0.055		U		U		U	0.032		U	---
4-Isopropyltoluene	mg/kg		UJ		UJ		UJ		UJ		U		U		U		U		U	---
Acetone	mg/kg	0.012	J		UJ		UJ	0.2		0.018		0.0065		U		0.13		0.0071		0.05
Carbon disulfide	mg/kg	0.0013	J		UJ		UJ		U	0.0058	J	0.0017	J		U		U	0.0011	J	---
Chloroethane	mg/kg		UJ		UJ		UJ		U		U		U		U		U		U	---
Chloroform	mg/kg		U		U		U		U		U		U		U		U		U	0.37
cis-1,2-Dichloroethene	mg/kg		UJ		UJ		UJ		U		U		U		U		U		U	0.25
Methylene chloride	mg/kg		UJ		UJ		UJ		U		U		U	0.0026	BJ	0.0056	BJ	0.003	BJ	0.05
Naphthalene	mg/kg		UJ		UJ		UJ		U		U		U	0.0017	J		U		U	---
Tetrachloroethene	mg/kg		UJ		UJ		UJ		U		U		U		U		U		U	1.3
Toluene	mg/kg		U		U		U		U		U		U		U		U		U	0.7
Vinyl chloride	mg/kg		UJ		UJ		UJ		U		U		U		U		U		U	0.02
NOTE: B = Method Blank.																				

NOTE: B = Method Blank.

TABLE 3-2 VOLATILE ORGANIC COMPOUND DETECTIONS IN SUBSURFACE SOIL

Parameter List USEPA Method 8260	Sample Location	SB-12				SB-13				SB-14				Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)		
	Sample Depth (ft)	4-8	8-12	12-14	4-8	8-12	12-24	4-8	8-12	12-14						
	Sample Date	1/18/2010				1/18/2010				1/18/2010						
	Sample Type	Composite				Composite				Composite						
1,1-Dichloroethane	mg/kg		U		U		UJ		UJ		U		U		U	0.27
1,2,4-Trimethylbenzene	mg/kg		U		U		UJ		UJ		U		U		U	3.6
2-Butanone	mg/kg		U		U		UJ		UJ		U		U		U	---
4-Isopropyltoluene	mg/kg		U		U		UJ		UJ		U		U		U	---
Acetone	mg/kg		U	25		0.038	0.05	J		UJ	0.0068	J	0.028	0.065	0.0064	0.05
Carbon disulfide	mg/kg		U		U		UJ		UJ	0.0059	J	0.0019	J	0.0087	J	---
Chloroethane	mg/kg		U		U		UJ		UJ		U		U		U	---
Chloroform	mg/kg		U		U		U		U		U		U		U	0.37
cis-1,2-Dichloroethene	mg/kg		U		U		UJ		UJ		U		U		U	0.25
Methylene chloride	mg/kg		U		U		UJ		UJ		U		U		U	0.05
Naphthalene	mg/kg	6.900			U		UJ		UJ		U	0.0058		0.0035	J	---
Tetrachloroethene	mg/kg		U		U		UJ		UJ		U		U		U	1.3
Toluene	mg/kg		U		U		U		U		U		U		U	0.7
Vinyl chloride	mg/kg		U		U		UJ		UJ		U		U		U	0.02

Parameter List USEPA Method 8260	Sample Location	SB-15				SB-16				SB-17				Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)				
	Sample Depth (ft)	4-8	8-12	12-14	4-8	8-12	12-14	4-8	8-12	12-14								
	Sample Date	1/18/2010				1/18/2010				1/19/2010								
	Sample Type	Composite				Composite				Composite								
1,1-Dichloroethane	mg/kg		U		U		U		U	0.028			U		U	0.27		
1,2,4-Trimethylbenzene	mg/kg		U	0.0034	J		U		U		U		U		U	3.6		
2-Butanone	mg/kg		U	0.0075			U	0.017			U		U		U	---		
4-Isopropyltoluene	mg/kg		U		U		U		U		U		U		U	---		
Acetone	mg/kg	0.019		0.039		0.026	0.11		0.035		0.0086		U	0.021	0.0068	0.05		
Carbon disulfide	mg/kg		U		U		U	0.0031	J	0.004	J		U	0.0022	J	0.0016	J	---
Chloroethane	mg/kg		U		U		U		U	0.018			U		U		---	
Chloroform	mg/kg		U		U		U		U		U		U		U		0.37	
cis-1,2-Dichloroethene	mg/kg		U		U		U		U		U		U		U		0.25	
Methylene chloride	mg/kg	0.0031	BJ	0.0038	BJ	0.0036	BJ	0.005	BJ	0.0022	BJ		U		U		0.05	
Naphthalene	mg/kg		U		U		U		U		U		U		U		---	
Tetrachloroethene	mg/kg	0.0015	J		U		U		U		U		U		U		1.3	
Toluene	mg/kg		U		U		U		U		U		U		U		0.7	
Vinyl chloride	mg/kg		U		U		U		U		U		U		U		0.02	

TABLE 3-2 VOLATILE ORGANIC COMPOUND DETECTIONS IN SUBSURFACE SOIL

Parameter List USEPA Method 8260	Sample Location	SB-18						SB-19						SB-20						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)	
	Sample Depth (ft)	4-8		8-12		12-14		0-4		4-8		8-12		4-8		8-12		12-14			
	Sample Date	1/19/2010						1/19/2010						1/19/2010							
	Sample Type	Composite						Composite						Composite							
1,1-Dichloroethane	mg/kg	NR		U			UJ		U		U		UJ		UJ		UJ		UJ	0.27	
1,2,4-Trimethylbenzene	mg/kg	NR			U		UJ		U		U		UJ		UJ		UJ		UJ	3.6	
2-Butanone	mg/kg	NR			U		UJ		U		U		UJ		UJ		UJ		UJ	---	
4-Isopropyltoluene	mg/kg	NR		0.019		0.02	J		U		U		UJ		UJ		UJ		UJ	---	
Acetone	mg/kg	NR			U		UJ		U		U		UJ		UJ		UJ		UJ	0.05	
Carbon disulfide	mg/kg	NR			U		UJ		U		U		UJ		UJ		UJ		UJ	---	
Chloroethane	mg/kg	NR			U		UJ		U		U		UJ		UJ		UJ		UJ	---	
Chloroform	mg/kg	NR			U		U		U		U		U		U		U		U	0.37	
cis-1,2-Dichloroethene	mg/kg	NR		0.0024	J		0.015	J		U		U		UJ		UJ		0.013	J	UJ	0.25
Methylene chloride	mg/kg	NR			U			UJ		U		U		UJ		UJ		UJ		UJ	0.05
Naphthalene	mg/kg	NR			U			UJ		U		U		UJ		UJ		UJ		UJ	---
Tetrachloroethene	mg/kg	NR			U			UJ		U		U		UJ		UJ		UJ		UJ	1.3
Toluene	mg/kg	NR			U			U		U		U		U		U		U		U	0.7
Vinyl chloride	mg/kg	NR		0.0025	J		0.011	J		U		U		UJ		UJ		UJ		UJ	0.02

Parameter List USEPA Method 8260	Sample Location	MW-01						MW-02						MW-03						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)			
	Sample Depth (ft)	2-6		6-10		10-14		2-6		6-10		10-14		2-6		6-10		10-14					
	Sample Date	4/27/2010						4/26/2010						4/26/2010									
	Sample Type	Composite						Composite						Composite									
1,1-Dichloroethane	mg/kg			U		U		U		U		U		U		U		U		U	0.27		
1,2,4-Trimethylbenzene	mg/kg				U		U		U		U		U		U		U		U		3.6		
2-Butanone	mg/kg			U		U		0.009		U		0.0066		U		U		0.036		0.0043	J	---	
4-Isopropyltoluene	mg/kg																				---		
Acetone	mg/kg			U		U		0.029		U		0.021		U		0.0057	J		0.11		0.022		0.05
Carbon disulfide	mg/kg			U		U			U		U		U		U		U		0.005	J	0.011		---
Chloroethane	mg/kg			U		U			U		U		U		U		U		U		U	---	
Chloroform	mg/kg			0.0013	J	0.0021	J	0.0016	J	0.0014	J	0.0013	J	0.004	BJ	0.0015	J	0.0018	J	0.002	J		0.37
cis-1,2-Dichloroethene	mg/kg			U		U			U		U		U		U		U		U		U	0.25	
Methylene chloride	mg/kg			U		U			U		U		U		U		U		U		U	0.05	
Naphthalene	mg/kg			U		U			U		U		U		U		U		U		U	---	
Tetrachloroethene	mg/kg			0.0014	BJ	0.0018	BJ	0.0017	BJ	0.0016	BJ	0.0016	BJ		U	0.002	BJ	0.0023	BJ	0.0021	BJ		1.3
Toluene	mg/kg			U		U		0.0013	J		U		U		U		U		U		U	0.7	
Vinyl chloride	mg/kg			U		U			U		U		U		U		U		U		U	0.02	

TABLE 3-2 VOLATILE ORGANIC COMPOUND DETECTIONS IN SUBSURFACE SOIL

Parameter List USEPA Method 8260	Sample Location	SB-DUP01 SB-15	SB-DUP02 SB-05		Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (ft)	12-14	0-4		
	Sample Date	1/18/2010	1/19/2010		
	Sample Type	Composite	Composite		
1,1-Dichloroethane	mg/kg		UJ		0.27
1,2,4-Trimethylbenzene	mg/kg		UJ		3.6
2-Butanone	mg/kg	0.0092	J		---
4-Isopropyltoluene	mg/kg		UJ		---
Acetone	mg/kg	0.051	J		0.05
Carbon disulfide	mg/kg	0.004	J		---
Chloroethane	mg/kg		UJ		---
cis-1,2-Dichloroethene	mg/kg		UJ		0.25
Methylene chloride	mg/kg		UJ		0.05
Naphthalene	mg/kg		UJ	0.18	---
Tetrachloroethene	mg/kg		UJ		1.3
Vinyl chloride	mg/kg		UJ		0.02

TABLE 3-3 SEMIVOLATILE ORGANIC COMPOUND DETECTIONS IN SUBSURFACE SOIL

Parameter List USEPA Method 8270	Sample Location	SB-01						SB-03						SB-04						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)		
	Sample Depth (ft)	4-8		8-12		12-14		4-8		8-12		12-14		4-8		8-12		12-14				
	Sample Date	1/19/2010						1/19/2010						1/19/2010								
	Sample Type	Composite						Composite						Composite								
2-Methylnaphthalene	mg/kg	0.75			U		U		U		U		U	0.093	J	NR			U	---		
4-Methylphenol	mg/kg	0.053	J			U		U		U		U		U		NR			U	---		
Acenaphthene	mg/kg	1.8				U		U		U		U		U	0.14	J	NR		U	20		
Acenaphthylene	mg/kg	1.9				U			0.05	J		U		U	0.63		NR		U	100		
Anthracene	mg/kg	4.3				U		U		U		U		U	0.74		NR		0.065	J	100	
Benzo(a)anthracene	mg/kg	7.4	D			U		U		0.11	J		U		U	1.1		NR		0.13	J	1.0
Benzo(a)pyrene	mg/kg	4.8				U		U		0.099	J		U		U	1.5		NR		0.15	J	1.0
Benzo(b)fluoranthene	mg/kg	6.5	D			U		U		0.12	J		U		U	2.1		NR		0.2	J	1.0
Benzo(g,h,i)perylene	mg/kg	2.6				U		U		0.083	J		U		U	1.1		NR		0.11	J	100
Benzo(k)fluoranthene	mg/kg	2.2				U		U		0.052	J		U		U	0.8		NR		0.082	J	0.80
Bis(2-ethylhexyl)phthalate	mg/kg	0.12	J			U		U			U		U		U	1		NR		0.99		---
Butylbenzylphthalate	mg/kg			U		U		U			U		U		U		U		U		U	---
Carbazole	mg/kg	1.3				U		U			U		U		U	0.16	J	NR			U	---
Chrysene	mg/kg	5.5				U		U		0.13	J		U		U	1.7		NR		0.16	J	1.0
Dibenzo(a,h)anthracene	mg/kg	0.99				U		U			U		U		U	0.41	J	NR			U	0.33
Dibenzofuran	mg/kg	1.5				U					U		U		U	0.07	J	NR			U	---
Di-n-butylphthalate	mg/kg			U		U		U			U		U		U		U	NR			U	---
Fluoranthene	mg/kg	17	D			U		U		0.16	J		U		U	2.4		NR		0.28	J	100
Fluorene	mg/kg	3.2				U		U			U		U		U	0.17	J	NR			U	30
Indeno(1,2,3-cd)pyrene	mg/kg	2.6				U		U		0.067	J		U		U	1.2		NR		0.12	J	0.50
Naphthalene	mg/kg	0.93				U		U			U		U		U		U	NR			U	12
Phenanthrene	mg/kg	16	D			U		U		0.091	J		U		U	1.1		NR		0.14	J	100
Pyrene	mg/kg	12	D			U		U		0.19	J		U		U	2.5		NR		0.27	J	100

NOTE: USEPA = United States Environmental Protection Agency.
ppm = Parts per million.
U = Compound was analyzed for, but not detected.
J = Estimated value.
NR = No Recovery.
--- =
D = Dilution of sample or extract.
Bold values indicate exceedence of standard.
Standards taken from Part 375 Unrestricted Soil Cleanup Objectives.

TABLE 3-3 SEMIVOLATILE ORGANIC COMPOUND DETECTIONS IN SUBSURFACE SOIL

Parameter List USEPA Method 8270	Sample Location	SB-05						SB-05A		SB-05B		SB-05C		Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (ft)	0-4		4-8		8-12		12-14		2-4		2-4		
	Sample Date	1/19/2010						1/19/2010						
	Sample Type	Composite						Composite						
2-Methylnaphthalene	mg/kg	0.83		0.038	J		U		U	0.067	J		U	---
4-Methylphenol	mg/kg	0.082	J		U		U	0.062	J		U		U	---
Acenaphthene	mg/kg	0.33	J	0.056	J		U		U	0.079	J		U	20
Acenaphthylene	mg/kg	2.1		0.31	J	0.11	J		U	0.31	J	0.12	J	100
Anthracene	mg/kg	2.9		0.41		0.091	J	0.055	J	0.3	J	0.11	J	100
Benzo(a)anthracene	mg/kg	4.6		1.1		0.38	J	0.12	J	0.81		0.3	J	1.0
Benzo(a)pyrene	mg/kg	3.4		0.86		0.36	J	0.089	J	0.81		0.31	J	1.0
Benzo(b)fluoranthene	mg/kg	4		0.98		0.48		0.15	J	0.98		0.41		1.0
Benzo(g,h,i)perylene	mg/kg	2		0.58		0.27	J	0.071	J	0.59		0.23	J	100
Benzo(k)fluoranthene	mg/kg	1.9		0.62		0.2	J	0.067	J	0.57		0.19	J	0.80
Bis(2-ethylhexyl)phthalate	mg/kg		U		U		U		U		U		U	---
Butylbenzylphthalate	mg/kg		U		U		U		U		U		U	---
Carbazole	mg/kg	0.79		0.095	J	0.045	J		U		U		U	---
Chrysene	mg/kg	4.1		1.1		0.39	J	0.16	J	0.85		0.34	J	1.0
Dibenzo(a,h)anthracene	mg/kg	0.74		0.18	J	0.068	J		U	0.19	J		U	0.33
Dibenzofuran	mg/kg	0.99		0.05	J		U		U	0.086	J		U	---
Di-n-butylphthalate	mg/kg		U		U		U		U		U		U	---
Fluoranthene	mg/kg	11	D	2		0.82		0.23	J	1.4		0.46		100
Fluorene	mg/kg	1.9		0.13	J		U		U	0.11	J		U	30
Indeno(1,2,3-cd)pyrene	mg/kg	2		0.51		0.23	J	0.065	J	0.56		0.22	J	0.50
Naphthalene	mg/kg	1.1			U		U		U		U		U	12
Phenanthrene	mg/kg	9.6	D	1.1		0.34	J	0.13	J	0.67		0.21	J	100
Pyrene	mg/kg	8.6	D	1.9		0.68		0.25	J	1.2		0.44		100

Parameter List USEPA Method 8270	Sample Location	SB-06				SB-07			SB-08				Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)	
	Sample Depth (ft)	4-8		8-12		12-14		4-8		8-12		12-14		
	Sample Date	1/19/2010				1/18/2010			1/18/2010					
	Sample Type	Composite				Composite			Composite					
2-Methylnaphthalene	mg/kg		U		U		U		U		U		U	---
4-Methylphenol	mg/kg		U		U		U		U		U		U	---
Acenaphthene	mg/kg		U		U		U		U		U		U	20
Acenaphthylene	mg/kg		U		U		U	0.11	J		U		U	100
Anthracene	mg/kg	0.045	J		U		U	0.2	J		U		U	100
Benzo(a)anthracene	mg/kg	0.18	J		U		U	0.36	J		U		U	1.0
Benzo(a)pyrene	mg/kg	0.14	J		U		U	0.36	J		U		U	1.0
Benzo(b)fluoranthene	mg/kg	0.16	J		U		U	0.46	J		U		U	1.0
Benzo(g,h,i)perylene	mg/kg	0.085	J		U		U	0.25	J		U		U	100
Benzo(k)fluoranthene	mg/kg	0.11	J		U		U	0.19	J		U		U	0.80
Bis(2-ethylhexyl)phthalate	mg/kg		U		U		U		U		U		U	---
Butylbenzylphthalate	mg/kg		U		U		U		U		U		U	---
Carbazole	mg/kg		U		U		U		U		U		U	---
Chrysene	mg/kg	0.18	J		U		U	0.45	J		U		U	1.0
Dibenzo(a,h)anthracene	mg/kg		U		U		U	0.065	J		U		U	0.33
Dibenzofuran	mg/kg		U		U		U		U		U		U	---
Di-n-butylphthalate	mg/kg		U		U		U		U		U		U	---
Fluoranthene	mg/kg	0.34	J		U		U	0.75			U		U	100
Fluorene	mg/kg		U		U		U	0.092	J		U		U	30
Indeno(1,2,3-cd)pyrene	mg/kg	0.07	J		U		U	0.26	J		U		U	0.50
Naphthalene	mg/kg		U		U		U		U		U		U	12
Phenanthrene	mg/kg	0.21	J		U		U	0.52	J		U		U	100
Pyrene	mg/kg	0.34	J		U		U	0.71			U		U	100

TABLE 3-3 SEMIVOLATILE ORGANIC COMPOUND DETECTIONS IN SUBSURFACE SOIL

Parameter List USEPA Method 8270	Sample Location	SB-09			SB-10			SB-11			Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)		
	Sample Depth (ft)	4-8	8-12	12-14	4-8	8-12	12-14	4-8	8-12	12-14			
	Sample Date	1/19/2010			1/18/2010			1/18/2010					
	Sample Type	Composite			Composite			Composite					
2-Methylnaphthalene	mg/kg	U		U		U		U		U		U	---
4-Methylphenol	mg/kg	U		U		U		U		U		U	---
Acenaphthene	mg/kg	U		U		U		U		U		U	20
Acenaphthylene	mg/kg	U	0.21	J		U	0.12	J		U	0.23	J	100
Anthracene	mg/kg	U	0.19	J		U	0.1	J		U	0.26	J	100
Benzo(a)anthracene	mg/kg	U	0.46			U	0.18	J		U	0.62		1.0
Benzo(a)pyrene	mg/kg	U	0.55		0.07	J	0.18	J		U	1.4		1.0
Benzo(b)fluoranthene	mg/kg	U	0.66		0.072	J	0.24	J		U	1.7		1.0
Benzo(g,h,i)perylene	mg/kg	U	0.45		0.068	J	0.18	J		U	1.1		100
Benzo(k)fluoranthene	mg/kg	U	0.31	J		U	0.12	J		U	0.85		0.80
Bis(2-ethylhexyl)phthalate	mg/kg	U		U		U	0.28	J		U		U	---
Butylbenzylphthalate	mg/kg	U		U		U		U		U		U	---
Carbazole	mg/kg	U	0.065	J		U		U		U	0.11	J	---
Chrysene	mg/kg	U	0.56			U	0.22	J		U	0.95		1.0
Dibenzo(a,h)anthracene	mg/kg	U	0.13	J		U		U		U	0.36	J	0.33
Dibenzofuran	mg/kg	U		U		U		U		U		U	---
Di-n-butylphthalate	mg/kg	U		U		U		U		U		U	---
Fluoranthene	mg/kg	U	0.95		0.069	J	0.36	J		U	1.3		100
Fluorene	mg/kg	U	0.069	J		U		U		U	0.073	J	30
Indeno(1,2,3-cd)pyrene	mg/kg	U	0.38	J	0.054	J	0.19	J		U	1.2		0.50
Naphthalene	mg/kg	U		U		U		U		U		U	12
Phenanthrene	mg/kg	U	0.54			U	0.16	J		U	0.6		100
Pyrene	mg/kg	U	0.82		0.078	J	0.34	J		U	1.3		100

SVOC Parameter List USEPA Method 8270	Sample Location	SB-12			SB-13			SB-14			Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)			
	Sample Depth (ft)	4-8	8-12	12-14	4-8	8-12	12-24	4-8	8-12	12-14				
	Sample Date	1/18/2010			1/18/2010			1/18/2010						
	Sample Type	Composite			Composite			Composite						
2-Methylnaphthalene	mg/kg	U		U		U		U		U		U	---	
4-Methylphenol	mg/kg	U		U		U		U	0.09	J		U	---	
Acenaphthene	mg/kg	U	0.077	J		U		U		U	67	J	20	
Acenaphthylene	mg/kg	U	0.22	J		U		U		U		U	100	
Anthracene	mg/kg	0.054	J	0.25	J		U	U	0.042	J	0.15	J	100	
Benzo(a)anthracene	mg/kg	0.17	J	0.54		0.06	J		U	0.13	J	0.47	J	1.0
Benzo(a)pyrene	mg/kg	0.16	J	0.53		0.056	J		U	0.13	J	0.4	J	1.0
Benzo(b)fluoranthene	mg/kg	0.2	J	0.78			U		U	0.15	J	0.52	J	1.0
Benzo(g,h,i)perylene	mg/kg	0.11	J	0.43	J		U		U	0.093	J	0.3	J	100
Benzo(k)fluoranthene	mg/kg	0.1	J	0.29	J		U		U	0.081	J	0.23	J	0.80
Bis(2-ethylhexyl)phthalate	mg/kg	U		U	0.33	J		U		U		U	---	
Butylbenzylphthalate	mg/kg	U		U		U		U		U		U	---	
Carbazole	mg/kg	U		U		U		U		U		U	---	
Chrysene	mg/kg	0.18	J	0.6		0.066	J		U	0.15	J	0.43	J	1.0
Dibenzo(a,h)anthracene	mg/kg	U	0.14	J		U		U		U		U	0.33	
Dibenzofuran	mg/kg	U		U		U		U		U		U	---	
Di-n-butylphthalate	mg/kg	U		U		U		U		U		U	---	
Fluoranthene	mg/kg	0.29	J	1.2		0.096	J		U	0.21	J	0.9		100
Fluorene	mg/kg	U	0.067	J		U		U		U		U	30	
Indeno(1,2,3-cd)pyrene	mg/kg	0.11	J	0.37	J		U		U	0.095	J	0.29	J	0.50
Naphthalene	mg/kg	U		U		U		U		U		U	12	
Phenanthrene	mg/kg	0.14	J	0.57			U		U	0.1	J	0.38	J	100
Pyrene	mg/kg	0.27	J	1		0.094	J		U	0.2	J	0.77		100

TABLE 3-3 SEMIVOLATILE ORGANIC COMPOUND DETECTIONS IN SUBSURFACE SOIL

Parameter List USEPA Method 8270	Sample Location	SB-15						SB-16						SB-17						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (ft)	4-8		8-12		12-14		4-8		8-12		12-14		4-8		8-12		12-14		
	Sample Date	1/18/2010						1/18/2010						1/19/2010						
	Sample Type	Composite						Composite						Composite						
2-Methylnaphthalene	mg/kg		U	0.073	J		U		U		U		U		U		U		U	---
4-Methylphenol	mg/kg		U		U		U		U		U		U		U		U		U	---
Acenaphthene	mg/kg		U	0.094	J		U		U		U		U		U		U		U	20
Acenaphthylene	mg/kg		0.14	J	0.31	J		U		U		U		U		U		U		100
Anthracene	mg/kg		0.18	J	0.4	J		U		U		U		U		U		U		100
Benzo(a)anthracene	mg/kg		0.48		0.66		0.071	J		U		U		U		U		U		1.0
Benzo(a)pyrene	mg/kg		0.54		0.81		0.072	J		U		U		U		U		U		1.0
Benzo(b)fluoranthene	mg/kg		0.7		1.1		0.11	J		U		U		U		U		U		1.0
Benzo(g,h,i)perylene	mg/kg		0.5		0.66		0.064	J		U		U		U		U		U		100
Benzo(k)fluoranthene	mg/kg		0.29	J	0.46			U		U		U		U		U		U		0.80
Bis(2-ethylhexyl)phthalate	mg/kg		0.37	J	1.4			U		0.16	J		U		U		U		U	---
Butylbenzylphthalate	mg/kg			U		U		U			U		U		U		U		U	---
Carbazole	mg/kg			U	0.13	J		U			U		U		U		U		U	---
Chrysene	mg/kg		0.54		0.87		0.092	J		U		U		U		U		U		1.0
Dibenzo(a,h)anthracene	mg/kg		0.14	J	0.22	J		U		U		U		U		U		U		0.33
Dibenzofuran	mg/kg			U	0.089	J		U		U		U		U		U		U		---
Di-n-butylphthalate	mg/kg			U	0.11	J		U			U		U		U		U		U	---
Fluoranthene	mg/kg		0.9		1.6		0.16	J	0.074	J		U		U	0.064	J		U		100
Fluorene	mg/kg		0.054	J	0.16	J		U		U		U		U		U		U		30
Indeno(1,2,3-cd)pyrene	mg/kg		0.49		0.66		0.066	J		U		U		U		U		U		0.50
Naphthalene	mg/kg			U		U		U			U		U		U		U		U	12
Phenanthrene	mg/kg		0.54		0.98		0.089	J		U		U		U		U		U		100
Pyrene	mg/kg		0.72		1.2		0.14	J	0.07	J		U		U	0.067	J		U		100

Parameter List USEPA Method 8270	Sample Location	SB-18						SB-19						SB-20						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)	
	Sample Depth (ft)	4-8		8-12		12-14		0-4		4-8		8-12		4-8		8-12		12-14			
	Sample Date	1/19/2010						1/19/2010						1/19/2010							
	Sample Type	Composite						Composite						Composite							
2-Methylnaphthalene	mg/kg		NR			U		U		U		U		U		U		U		---	
4-Methylphenol	mg/kg		NR			U		U		U		U		U		U		U		---	
Acenaphthene	mg/kg		NR			U		U		U		U		U		U		U	0.054	J	20
Acenaphthylene	mg/kg		NR			U		U		U		U		U		U		U	0.53		100
Anthracene	mg/kg		NR			U		U	0.065	J		U		U		U		U	0.49		100
Benzo(a)anthracene	mg/kg		NR			U		U	0.092	J		U		U		U		U	0.61		1.0
Benzo(a)pyrene	mg/kg		NR			U		U	0.11	J		U		U		U		U	0.71		1.0
Benzo(b)fluoranthene	mg/kg		NR			U		U	0.13	J		U		U		U		U	0.96		1.0
Benzo(g,h,i)perylene	mg/kg		NR			U		U	0.098	J		U		U		U		U	0.64		100
Benzo(k)fluoranthene	mg/kg		NR			U		U	0.078	J		U		U		U		U	0.39	J	0.80
Bis(2-ethylhexyl)phthalate	mg/kg		NR			U		U		U		U		U		U		U	0.27	J	---
Butylbenzylphthalate	mg/kg		NR			U		U		U		U		U		U		U		U	---
Carbazole	mg/kg		NR			U		U		U		U		U		U		U	0.13	J	---
Chrysene	mg/kg		NR			U		U	0.13	J		U		U		U		U	0.88		1.0
Dibenzo(a,h)anthracene	mg/kg		NR			U		U		U		U		U		U		U	0.18	J	0.33
Dibenzofuran	mg/kg		NR			U		U		U		U		U		U		U	0.051	J	---
Di-n-butylphthalate	mg/kg		NR			U		U		U		U		U		U		U		U	---
Fluoranthene	mg/kg		NR			U		U	0.2	J		U		U		U		U	1.5		100
Fluorene	mg/kg		NR			U		U		U		U		U		U		U	0.13	J	30
Indeno(1,2,3-cd)pyrene	mg/kg		NR			U		U	0.084	J		U		U		U		U	0.54		0.50
Naphthalene	mg/kg		NR			U		U		U		U		U		U		U		U	12
Phenanthrene	mg/kg		NR			U		U	0.12	J		U		U		U		U	0.9		100
Pyrene	mg/kg		NR			U		U	0.2	J		U		U		U		U	1.3		100

TABLE 3-3 SVOC DETECTIONS IN SUBSURFACE SOIL

TABLE 3-3 SVOC DETECTIONS IN SUBSURFACE SOIL																				
Parameter List USEPA Method 8270	Sample Location	MW-01					MW-02					MW-03					Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)			
	Sample Depth (ft)	2-6		6-10		10-14		2-6		6-10		10-14		2-6		6-10		10-14		
	Sample Date	4/27/2010					4/26/2010					4/26/2010								
	Sample Type	Composite					Composite					Composite								
2-Methylnaphthalene	mg/kg		U		U		U		U		U		U		U		U		U	---
4-Methylphenol	mg/kg				U		U		U		U		U		U		U		U	---
Acenaphthene	mg/kg			U		U		U		U		U		U		U		U		20
Acenaphthylene	mg/kg			U		U	0.083	J	0.067	J	0.055	J		U	0.13	J		U		100
Anthracene	mg/kg			U		U	0.099	J	0.07	J	0.1	J		U	0.15	J		U		100
Benzo(a)anthracene	mg/kg	0.044	J		U	0.32	J	0.22	J	0.37	J		U	0.41	J	0.095	J		U	1.0
Benzo(a)pyrene	mg/kg		U		U	0.3	J	0.24	J	0.26	J		U	0.41	J	0.074	J		U	1.0
Benzo(b)fluoranthene	mg/kg		U		U	0.22	J	0.18	J	0.27	J		U	0.54		0.11	J		U	1.0
Benzo(g,h,i)perylene	mg/kg		U		U	0.14	J	0.12	J	0.14	J		U	0.3	J	0.061	J		U	100
Benzo(k)fluoranthene	mg/kg		U		U	0.32	J	0.19	J	0.19	J		U	0.23	J		U		U	0.80
Bis(2-ethylhexyl)phthalate	mg/kg		U		U	0.24	J	0.3	J	1.3			U	0.23	J	0.34	J	0.15	J	---
Butylbenzylphthalate	mg/kg		U		U		U	0.066	J		U		U		U		U		U	---
Carbazole	mg/kg		U		U		U		U		U		U	0.06	J		U		U	---
Chrysene	mg/kg	0.04	J		U	0.33	J	0.26	J	0.34	J		U	0.54		0.11	J		U	1.0
Dibenzo(a,h)anthracene	mg/kg		U		U		U		U		U		U	0.071	J		U		U	0.33
Dibenzofuran	mg/kg		U		U	0.52		0.33	J	0.56		0.057	J	0.82		0.16	J		U	---
Di-n-butylphthalate	mg/kg		U		U				U		U		U		U		U		U	---
Fluoranthene	mg/kg		U		U		U		U		U		U		U		U		U	100
Fluorene	mg/kg		U		U		U		U		U		U		U		U		U	30
Indeno(1,2,3-cd)pyrene	mg/kg		U		U	0.17	J	0.13	J	0.15	J		U	0.31	J	0.061	J		U	0.50
Naphthalene	mg/kg		U		U		U		U		U		U		U		U		U	12
Phenanthrene	mg/kg		U		U	0.3	J	0	J	0	J		U	0	J	0	J		U	---
Pyrene	mg/kg		U		U	0.6		0	J	1		0	J	1		0	J		U	---

Parameter List USEPA Method 8270	Sample Location	SB-DUP01 SB-15	SB-DUP02 SB-05	Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)		
	Sample Depth (ft)	12-14	0-4			
	Sample Date	1/18/2010	1/19/2010			
	Sample Type	Composite	Composite			
2-Methylnaphthalene	mg/kg	0.043	J	0.61	---	
4-Methylphenol	mg/kg		U	0.076	J	---
Acenaphthene	mg/kg	0.06	J	0.22	J	20
Acenaphthylene	mg/kg	0.16	J	1.8		100
Anthracene	mg/kg	0.25	J	2.3		100
Benzo(a)anthracene	mg/kg	0.55		4		1.0
Benzo(a)pyrene	mg/kg	0.49		3.2		1.0
Benzo(b)fluoranthene	mg/kg	0.68		3.9		1.0
Benzo(g,h,i)perylene	mg/kg	0.37	J	1.8		100
Benzo(k)fluoranthene	mg/kg	0.28	J	1.8		0.80
Bis(2-ethylhexyl)phthalate	mg/kg	0.67			U	---
Butylbenzylphthalate	mg/kg		U		U	---
Carbazole	mg/kg	0.055	J	0.55		---
Chrysene	mg/kg	0.52		3.5		1.0
Dibenzo(a,h)anthracene	mg/kg	0.089	J	0.68		0.33
Dibenzofuran	mg/kg	0.05	J	0.76		---
Di-n-butylphthalate	mg/kg		U		U	---
Fluoranthene	mg/kg	1.2		8.5	D	100
Fluorene	mg/kg	0.1	J	1.4		30
Indeno(1,2,3-cd)pyrene	mg/kg	0.33	J	1.8		0.50
Naphthalene	mg/kg		U	0.9		12
Phenanthrene	mg/kg	0.71		6.5	D	100
Pyrene	mg/kg	0.93		6.7	D	100

TABLE 3-4 METAL DETECTIONS IN SUBSURFACE SOIL

Parameter List USEPA Method 6010 & 7471	Sample Location	SB-01						SB-03						SB-04						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (ft)	4-8		8-12		12-14		4-8		8-12		12-14		4-8		8-12		12-14		
	Sample Date	1/19/2010						1/19/2010						1/19/2010						
	Sample Type	Composite						Composite						Composite						
Aluminum	mg/kg	2940	J	1140	J	2660	J	7800	J	10400	J	9460	J	7590	J	NR		7000	J	---
Antimony	mg/kg		UJ		UJ		UJ		J	0.34	J	0.45	J		UJ	NR			UJ	---
Arsenic	mg/kg	3		3.1		2.3		3.1		3.2		8.9		14.3	J	NR		4.4	J	13
Barium	mg/kg	24.4	J	11.3	J	41.6	J	109	J	161	J	58.9	J	139	J	NR		78.7	J	350
Beryllium	mg/kg	0.14	J	0.074	J	0.14	BJ	0.31	J	0.24	J	0.42	J	0.53	J	NR		0.38	J	7.2
Cadmium	mg/kg	0.054	J		UJ		UJ	0.13	J		UJ		UJ	7.3		NR		0.54		2.5
Calcium	mg/kg	176000		297000		175000		3620		3290		3440		36300	J	NR		9060	J	---
Chromium	mg/kg	12	J	2.8	J	5.1	J	133	J	21.1	J	16.5	J	1230	J	NR		34.1	J	30
Cobalt	mg/kg	2.4	J	0.71	J	4	J	4.5	J	3.5	J	11	J	8.7	J	NR		6	J	---
Copper	mg/kg	16.4	J	2.6	J	17	J	52	J	21.6	J	16.5	J	1020	J	NR		52.5	J	50
Iron	mg/kg	6940		2340		7660		11400		11200		32100		24800	J	NR		21400	J	---
Lead	mg/kg	14.5	J	2.2	J	3	J	15.7	J	9.7	J	7.7	J	171	J	NR		18.3	J	63
Magnesium	mg/kg	33800	J	11000	J	16800	J	2780	J	2410	J	4500	J	11000	J	NR		3740	J	---
Manganese	mg/kg	186	J	58.7	J	311	J	120	J	86.1	J	158	J	356	J	NR		269	J	1,600
Mercury	mg/kg	0.007		0.0067	B	0.012	B	0.084		0.091		0.034		0.28		NR		0.19		0.18
Nickel	mg/kg	8.7	J	2.8	J	9.1	J	71.3	J	12	J	19.4	J	445	J	NR		18.1	J	30
Potassium	mg/kg	700		631		800		641		710		1110		716		NR		449		---
Selenium	mg/kg		U		U		U	1.3		1.2		1.8			U	NR		1.4		3.9
Silver	mg/kg		U		U		U		U		U		U	4	J	NR		0.35	J	2.0
Sodium	mg/kg	162		129		165		42.2		72.2		90.4		80.5		NR		43.1		---
Thallium	mg/kg	2.6		3.1		2.5		0.34		0.49		0.48		1.3		NR		0.65		---
Vanadium	mg/kg	6.5	J	2.7	J	5.7	J	15.7	J	20	J	24.7	J	20.4	J	NR		18	J	---
Zinc	mg/kg	21.1	J	6.2	J	13.2	J	63.7	J	32	J	48.9	J	497	J	NR		62.1	J	109
NOTE: USEPA = United States Environmental Protection Agency. ppm = Parts per million. mg/kg = Milligrams per kilogram. J = Less than Contract Required Quantitation Limit, but greater than or equivalent to the Method Detection Limit. NR = No Recovery --- = U = Less than Method Detection Limit. B = Analyte found in associated method blank, as well as sample. Bold values indicate exceedence of standard. Standards taken from Part 375 Unrestricted Soil Cleanup Objectives.																				

TABLE 3-4 METAL DETECTIONS IN SUBSURFACE SOIL

Parameter List USEPA Method 6010 & 7471	Sample Location	SB-05								SB-05A		SB-05B		SB-05C		Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (ft)	0-4		4-8		8-12		12-14		2-4		2-4		2-4		
	Sample Date	1/19/2010								1/19/2010						
	Sample Type	Composite								Composite						
Aluminum	mg/kg	4910		5970	J	10300	J	6210	J	3820		3890		6500		---
Antimony	mg/kg		UJ		UJ		UJ	0.5	J		UJ		U		UJ	---
Arsenic	mg/kg	4.2		9		7.1		8.6		3.9		4.2		6.8		13
Barium	mg/kg	44.8	J	73.4	J	52.9	J	99.8	J	39.3	J	43	J	195	J	350
Beryllium	mg/kg	0.16	J	0.26	J	0.42	J	0.28	J	0.16		0.17	J	0.26	J	7.2
Cadmium	mg/kg	0.16	B	0.13	J	0.078	J	0.3	J	0.11		0.16		0.24	B	2.5
Calcium	mg/kg	54200		68400		50400		17500		26600		129000		32200		---
Chromium	mg/kg	24		10.1	J	16	J	9.6	J	17.6		33.9		75.2		30
Cobalt	mg/kg	4.6	J	6.7	J	7.7	J	5.1	J	3.4	J	3.8	J	5.1	J	---
Copper	mg/kg	48.1		29.4	J	58.1	J	125	J	34.9		34.8		53.9		50
Iron	mg/kg	13000		20700		27300		16300		9830		9730		13800		---
Lead	mg/kg	32.4		70.4	J	44.5	J	38.4	J	42.5		18.7		83.5		63
Magnesium	mg/kg	10700	J	8670	J	12900	J	5610	J	6430	J	10300	J	7890	J	---
Manganese	mg/kg	338	J	322	J	213	J	113	J	135	J	326	J	297	J	1,600
Mercury	mg/kg	0.14	J	0.11		0.8		1.2		0.14	J	0.068	J	0.11	J	0.18
Nickel	mg/kg	16.8	J	13.1	J	23	J	16.3	J	11.8	J	20.9	J	31.7	J	30
Potassium	mg/kg	1040		875		1230		773		617		900		749		---
Selenium	mg/kg		U		U	0.68		1.7			U		U		U	3.9
Silver	mg/kg		U		U	1.9		9.7		0.38			U	0.19		2.0
Sodium	mg/kg	73.2	J	145		200		484		49.7		97.6		65.5		---
Thallium	mg/kg	1.1		1.3		1.3			U	0.62		1.9		0.84		---
Vanadium	mg/kg	12		13.7	J	15.6	J	12.2	J	9		10.2		15		---
Zinc	mg/kg	57.9	J	67	J	78.8	J	147	J	56.1	J	41.9	J	134	J	109

Parameter List USEPA Method 6010 & 7471	Sample Location	SB-06						SB-07						SB-08						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (ft)	4-8		8-12		12-14		4-8		8-12		12-14		4-8		8-12		12-14		
	Sample Date	1/19/2010						1/18/2010						1/18/2010						
	Sample Type	Composite						Composite						Composite						
Aluminum	mg/kg	9700	J	2330	J	3350	J	5680	J	6160	J	4200	J	8290		6870		4320		---
Antimony	mg/kg		UJ		UJ		UJ		UJ		UJ		UJ		UJ		UJ		UJ	---
Arsenic	mg/kg	5.2		1.3		2.4		7.5	J	12.6	J	4	J	2.5		3.9		4.8		13
Barium	mg/kg	54	J	39.2	J	30.6	J	81.1	J	122	J	36	J	118	J	43.6	J	39.7	J	350
Beryllium	mg/kg	0.33	J	0.093	J	0.12	J	0.27	J	0.21	J	0.13	J	0.24	J	0.22	BJ	0.16	J	7.2
Cadmium	mg/kg		UJ		UJ		UJ	0.53		0.17		0.12		0.014			U		U	2.5
Calcium	mg/kg	47600		32000		32500		43000	J	3170	J	50700	J	2940		4230		60300		---
Chromium	mg/kg	11.7	J	3.9	J	5.5	J	19.5	J	13.2	J	8.2	J	14		11.9		6.7		30
Cobalt	mg/kg	6.7	J	2.4	J	3	J	5.4	J	3.4	BJ	5.8	J	3.1	J	7	J	3.7	J	---
Copper	mg/kg	46.5	J	8.4	J	7.9	J	60.2	J	36.5	J	15.3	J	21.1		12.4		10		50
Iron	mg/kg	23400		6170		8190		13500	J	13600	J	16000	J	8370		21400		20000		---
Lead	mg/kg	33.7	J	1.6	J	1.8	J	37	J	7.3	J	4.4	J	6.6		4.6		2		63
Magnesium	mg/kg	22300	J	7240	J	9250	J	18300	J	1820	J	8610	J	2510	J	4040	J	16200	J	---
Manganese	mg/kg	433	J	176	J	202	J	431	J	128	J	298	J	69.3	J	153	J	380	J	1,600
Mercury	mg/kg	0.16		0.0088			U	0.36		0.065		0.022		0.047	J	0.016	BJ		J	0.18
Nickel	mg/kg	14.2	J	5.3	J	7.3	J	14.7	J	9.4	J	10.4	J	10.1	J	13.8	J	9.9	J	30
Potassium	mg/kg	1160		512		745		431		550		531		787		866		1070		---
Selenium	mg/kg	1.2			U		U	1.6		2.1			U	0.98		1.3			U	3.9
Silver	mg/kg		U		U		U	2	J		UJ		UJ		U		U		U	2.0
Sodium	mg/kg	370		95.8		81		1760		1780		611		1050		1250		179		---
Thallium	mg/kg	1.4		0.6		0.62		1.2			U	0.8	B		U		U	1.4		---
Vanadium	mg/kg	17.3	J	5.9	J	7.2	J	16.2	J	26.6	J	13.3	J	19.8		16.7		9.4		---
Zinc	mg/kg	44.1	J	9.4	J	13.5	J	69.8	J	30.2	J	30.2	J	32.5	J	44.3	J	14.2	J	109

TABLE 3-4 METAL DETECTIONS IN SUBSURFACE SOIL

Parameter List USEPA Method 6010 & 7471	Sample Location	SB-09						SB-10						SB-11						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (ft)	4-8		8-12		12-14		4-8		8-12		12-14		4-8		8-12		12-14		
	Sample Date	1/19/2010						1/18/2010						1/18/2010						
	Sample Type	Composite						Composite						Composite						
Aluminum	mg/kg	8490	J	6660	J	8440	J	4730	J	6700	J	3130	J	5150	J	4090	J	4290	J	---
Antimony	mg/kg		UJ		UJ		UJ		UJ		UJ		UJ		UJ		UJ		UJ	---
Arsenic	mg/kg	1.6		8.8		2.9		5.9	J	2.6	J	5	J	7.2	J	4.5	J	5	J	13
Barium	mg/kg	133	J	74.6	J	98.5	J	55.4	J	48.2	J	22.8	J	52.2	J	70.9	J	48.4	J	350
Beryllium	mg/kg	0.24	J	0.33	J	0.28	J	0.2	J	0.24	J	0.11	J	0.25	J	0.16	BJ	0.25	J	7.2
Cadmium	mg/kg		UJ	2.8	J	0.3	J	0.46		0.2		0.071		0.66		0.39		0.12		2.5
Calcium	mg/kg	2640		24300		4240		15500	J	6170	J	60400	J	18300	J	5060	J	27500	J	---
Chromium	mg/kg	37.4	J	513	J	32	J	14.2	J	12.7	J	6	J	71.5	J	11.4	J	6.9	J	30
Cobalt	mg/kg	3.5	J	5	J	7.4	J	5.2	J	7.7	J	3.4	J	4.6	J	3.4	J	4.8	J	---
Copper	mg/kg	25.5	J	702	J	36.1	J	27.6	J	14.7	J	10.6	J	109	J	35	J	13.9	J	50
Iron	mg/kg	9960		15900		24500		19900	J	22100	J	15600	J	11300	J	6690	J	14600	J	---
Lead	mg/kg	9.6	J	102	J	10.1	J	7	J	5.6	J	3	J	51.2	J	5.6	J	3.7	J	63
Magnesium	mg/kg	2760	J	10700	J	4150	J	2310	J	3960	J	14100	J	6520	J	987	J	10300	J	---
Manganese	mg/kg	74	J	192	J	231	J	411	J	245	J	341	J	146	J	61.5	J	170	J	1,600
Mercury	mg/kg	0.025		0.24		0.027		0.08		0.024		0.0075		0.39		0.089		0.0097		0.18
Nickel	mg/kg	15.6	J	212	J	22.2	J	10	J	15.1	J	7.6	J	30.7	J	7.8	J	10.4	J	30
Potassium	mg/kg	625		870		949		360		606		508		405		376		552		---
Selenium	mg/kg	0.96	B	0.94		1.2		2.3		0.98			U	0.94	B	1.6			U	3.9
Silver	mg/kg		U	3.3			U		UJ		UJ		UJ	2.1	J		UJ		UJ	2.0
Sodium	mg/kg	83.5		67.4		98.3		2120		374		94.7		728		909		248		---
Thallium	mg/kg		U	0.78		0.62		0.77		0.57		1.3		0.39	B		U	0.57	B	---
Vanadium	mg/kg	15.3	J	15.9	J	17.4	J	10.7	J	16.6	J	7.9	J	12.9	J	19.5	J	11	J	---
Zinc	mg/kg	48.8	J	465	J	72	J	45.7	J	54.3	J	15.9	J	90.1	J	16.4	J	22.8	J	109

Parameter List USEPA Method 6010 & 7471	Sample Location	SB-12						SB-13						SB-14						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (ft)	4-8		8-12		12-14		4-8		8-12		12-24		4-8		8-12		12-14		
	Sample Date	1/18/2010						1/18/2010						1/18/2010						
	Sample Type	Composite						Composite						Composite						
Aluminum	mg/kg	5140		6690		2330	J	5920	J	7000	J	3980	J	4720		4780		4260		---
Antimony	mg/kg		UJ		U		UJ		UJ		UJ		UJ		UJ	0.31	J		UJ	---
Arsenic	mg/kg	19		37		2.4	J	3.9	J	3.5	J	17.7	J	19.8		4.4		4.6		13
Barium	mg/kg	36.4	J	63.1		19.5	J	86.7	J	85	J	29.1	J	50	J	54.9	J	21.3	J	350
Beryllium	mg/kg	0.18	J	0.33		0.087	J	0.32	J	0.19	J	0.14	J	0.19	BJ	0.18	J	0.17		7.2
Cadmium	mg/kg	0.0082	U	0.61		0.14	B	0.51		0.27			UJ	0.027	BJ	0.14			U	2.5
Calcium	mg/kg	37700		43300		10800	J	2830	J	3650	J	56200	J	44200		14900		55400		---
Chromium	mg/kg	8.2		16		5.1	J	14.6	J	24	J	7.4	J	7.7		8.2		7		30
Cobalt	mg/kg	5.6	J	7		3.5	J	2.1	BJ	2.9	J	9.8	J	5.3	J	5	J	3.9	J	---
Copper	mg/kg	18		50.7		16.7	J	25.8	J	28.9	J	9.6	J	16		48.4		16		50
Iron	mg/kg	18600		28000		7380	J	5930	J	8330	J	22500		11800		14500		18300		---
Lead	mg/kg	8		49.4		7	J	6.8	J	6.9	J	2.7	J	13.9		11.9		3		63
Magnesium	mg/kg	12600	J	12100		3080	J	1480	J	2110	J	12600	J	12200	J	4500	J	11100	J	---
Manganese	mg/kg	379	J	306		107	J	56.5	J	86.7	J	312	J	242	J	274	J	352	J	1,600
Mercury	mg/kg	0.029	BJ	0.2		0.057		0.11		0.065			U	0.021	J	0.17	J	0.01	J	0.18
Nickel	mg/kg	11.4	J	16.4		6.3	J	7.2	J	10.2	J	10.8	J	10.8	J	9.3	J	10	J	30
Potassium	mg/kg	768		771		206		679		590		562		880		617		1010		---
Selenium	mg/kg	0.61	B	1.2	B	0.89		1.6		1.6		0.6	B		U		U		U	3.9
Silver	mg/kg		U	3		0.1	J		UJ		UJ		U		U	1.1	B		U	2.0
Sodium	mg/kg	198		449		199		667		584		161		152		1000		295		---
Thallium	mg/kg	1.1		1.1	B		U		U		U	1.2	J	0.92		0.64		1.2		---
Vanadium	mg/kg	11.7		14		5.4	J	16.5	J	15.5	J	10.1	J	10.9		10.4		10.2		---
Zinc	mg/kg	30.2	J	80.6		35.9	J	30	J	27.1	J	20.4	J	70	J	68	J	18	J	109

TABLE 3-4 METAL DETECTIONS IN SUBSURFACE SOIL

Parameter List USEPA Method 6010 & 7471	Sample Location	SB-15						SB-16						SB-17						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (ft)	4-8		8-12		12-14		4-8		8-12		12-14		4-8		8-12		12-14		
	Sample Date	1/18/2010						1/18/2010						1/19/2010						
	Sample Type	Composite						Composite						Composite						
Aluminum	mg/kg	7600	J	4860	J	4770	J	6780	J	5540	J	3510	J	5880	J	7000	J	4090	J	---
Antimony	mg/kg	0.77	J		UJ	0.19	J		UJ		UJ		UJ		UJ		UJ		J	---
Arsenic	mg/kg	5.2	J	5.9	J	7.2	J	5.7	J	2.5	J	3.8	J	3.9		3.3		7.8		13
Barium	mg/kg	57.2	J	86.8	J	47.2	J	86.3	J	80.8	J	10.5	J	77.2	J	43.1	J	17.7	J	350
Beryllium	mg/kg	0.23	J	0.24	J	0.23	J	0.33	J	0.11	J	0.1	BJ	0.22	J	0.27	J	0.15	J	7.2
Cadmium	mg/kg	0.25		1.1		0.46		0.47		0.16		0.075	B	0.043	J		UJ		UJ	2.5
Calcium	mg/kg	42400	J	42700	J	20500	J	7190	J	3440	J	17300	J	4670		8930		48600		---
Chromium	mg/kg	13.4	J	245	J	17.4	J	12.3	J	11.8	J	7.7	J	9.3	J	13.7	J	6.9	J	30
Cobalt	mg/kg	7.4	J	4.6	J	5.4	J	5.2	J	3.7	J	4.5	J	2.7	J	6.7	J	3.7	J	---
Copper	mg/kg	22.9	J	139	J	64.4	J	68.7	J	16.5	J	8.4	J	28.7	J	15.7	J	11.9	J	50
Iron	mg/kg	23100	J	16600	J	22800	J	13000	J	11000	J	11600	J	7090		17100		9280		---
Lead	mg/kg	39.9	J	92.1	J	45.3	J	20.4	J	5.1	J	3.3	J	10.1	J	5.3	J	2.7	J	63
Magnesium	mg/kg	10800	J	7490	J	5780	J	3670	J	2400	J	8320	J	2340	J	4220	J	12500	J	---
Manganese	mg/kg	242	J	315	J	262	J	219	J	98.9	J	193	J	75.9	J	173	J	229	J	1,600
Mercury	mg/kg	0.073		0.12		0.23		0.34		0.036		0.011	B	0.31		0.013		0.0074		0.18
Nickel	mg/kg	16.4	J	89.7	J	15.9	J	13.2	J	9.5	J	8.5	J	7.9	J	13.5	J	8.6	J	30
Potassium	mg/kg	751		463		399		431		507		436		501		938		880		---
Selenium	mg/kg		U	0.67	B	1.3		1.3		1.3		0.85	B	1.1		1.6			U	3.9
Silver	mg/kg		UJ	2.7	J	3	J	3	J		UJ		UJ	1.1			U		U	2.0
Sodium	mg/kg	64.7		237		416		393		172		150		199		183		104		---
Thallium	mg/kg	0.91		0.96		0.77		0.44		0.27		0.45	B		U	0.59		1.1		---
Vanadium	mg/kg	14.6	J	12.4	J	11.7	J	15.2	J	14.3	J	12.8	J	14.6	J	17	J	10	J	---
Zinc	mg/kg	48.5	J	137	J	97	J	70	J	29.5	J	24.2	J	34.2	J	46.4	J	14.3	J	109

Parameter List USEPA Method 6010 & 7471	Sample Location	SB-18						SB-19						SB-20						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (ft)	4-8		8-12		12-14		0-4		4-8		8-12		4-8		8-12		12-14		
	Sample Date	1/19/2010						1/19/2010						1/19/2010						
	Sample Type	Composite						Composite						Composite						
Aluminum	mg/kg	NR		3960	J	3890	J	13900		3740		3530		11500		11100		13800		---
Antimony	mg/kg	NR			UJ		UJ		UJ		UJ		UJ		UJ		UJ		UJ	---
Arsenic	mg/kg	NR		2.6		2.3		7.4		4.5		3.2		5.6		5.1		6.2		13
Barium	mg/kg	NR		17.2	J	13.5	J	134	J	37	J	42.1	J	85.5	J	111	J	154	J	350
Beryllium	mg/kg	NR		0.15	BJ	0.14	J	0.64	J	0.14	BJ	0.14	BJ	0.52	J	0.39	J	0.57	J	7.2
Cadmium	mg/kg	NR			UJ		UJ	0.84			U		U		U	0.47		2.4		2.5
Calcium	mg/kg	NR		41200		37300		8450		72800		58800		6020		16400		11200		---
Chromium	mg/kg	NR		6.7	J	7.2	J	182		5.8		5.6		20		17.2		240		30
Cobalt	mg/kg	NR		4.3	J	4.4	J	9.8	J	4.8	J	3.7	J	9.1	J	4.6	J	6.6	J	---
Copper	mg/kg	NR		17.3	J	27.8	J	70		19.1		9.1		22.1		23.3		270		50
Iron	mg/kg	NR		10000		10000		32700		10300		9890		29200		13300		22300		---
Lead	mg/kg	NR		2.9	J	3.5	J	43.2		2.2		2.2		7.7		8.2		58.8		63
Magnesium	mg/kg	NR		10700	J	13900	J	5840	J	11700	J	14100	J	5480	J	7380	J	6530	J	---
Manganese	mg/kg	NR		221	J	187	J	269	J	413	J	350	J	157	J	173	J	182	J	1,600
Mercury	mg/kg	NR		0.011	B	0.015	B	0.044	J		UJ		UJ	0.0088	J	0.044	J	0.2	J	0.18
Nickel	mg/kg	NR		9.1	J	10	J	80.6	J	9.9	J	8.7	J	22.8	J	32	J	116	J	30
Potassium	mg/kg	NR		791		647		849		908		936		1250		965		1080		---
Selenium	mg/kg	NR			U		U		U		U		U		U		U		U	3.9
Silver	mg/kg	NR			U		U		U		U		U		U		U		U	2.0
Sodium	mg/kg	NR		72.8		67.4		142		90.1		90.3		128		86.1		102		---
Thallium	mg/kg	NR		0.93		0.83		0.42		1.5		1.3		0.53		0.5		0.37		---
Vanadium	mg/kg	NR		9.9	J	12.2	J	31.7		8.8		8.6		27.8		20		26.2		---
Zinc	mg/kg	NR		16.8	J	17.2	J	93.4	J	16.3	J	12.2	J	42.2	J	40.1	J	149	J	109

TABLE 3-4 METAL DETECTIONS IN SUBSURFACE SOIL

Parameter List USEPA Method 6010 & 7471	Sample Location	MW-01						MW-02						MW-03						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (ft)	2-6		6-10		10-14		2-6		6-10		10-14		2-6		6-10		10-14		
	Sample Date	4/27/2010						4/26/2010						4/26/2010						
	Sample Type	Composite						Composite						Composite						
Aluminum	mg/kg	1840		6660		6570		7360		7730		6050		9270		7790		5730		---
Antimony	mg/kg		U		U		U		U		U		U		U		U		U	---
Arsenic	mg/kg	2.4	N*	12.6	N*	10.5	N*	9.2	N*	24.8	N*	26.7	N*	5.7	N*	5.7	N*	4.4	N*	13
Barium	mg/kg	18.9	*E	49.6	*E	62.3	*E	57.7	*E	53.8	*E	36.6	*E	124	*E	98.3	*E	10.1	*E	350
Beryllium	mg/kg	0.1	B	0.24		0.23		0.3		0.31		0.25		0.26		0.22	B	0.14	B	7.2
Cadmium	mg/kg	0.14	B	0.19	B	0.56		0.19	B	0.29		0.29		0.91		0.49		0.18	B	2.5
Calcium	mg/kg	228000	E	47300	E	37100	E	38900	E	21600	E	41300	E	5920	E	4280	E	23800	E	---
Chromium	mg/kg	11	E	10.9	E	17.4	E	14.5	E	15.8	E	10.1	E	133	E	35.1	E	7.3	E	30
Cobalt	mg/kg	1.3	BE	6.1	E	6.3	E	5.6	E	7.4	E	6.1	E	4	E	5.7	E	4.8	E	---
Copper	mg/kg	8.2		19.1		51.2		21.3		30.8		26		73.7		29.3		7.7		50
Iron	mg/kg	4720	E	17900	E	22100	E	18800	E	22300	E	23000	E	13500	E	13400	E	21700	E	---
Lead	mg/kg	9.1	N*E	12.5	N*E	33.2	N*E	13.6	N*E	24.2	N*E	34.3	N*E	35	N*E	10.8	N*E	2.9	N*E	63
Magnesium	mg/kg	27300	E	13200	E	11500	E	11900	E	9310	E	14300	E	3060	E	2130	E	13600	E	---
Manganese	mg/kg	274	E	529	E	452	E	409	E	308	E	432	E	120	E	120	E	281	E	1,600
Mercury	mg/kg	0.072		0.027	B	0.15		0.049		0.082		0.3		0.55		0.1		0.017	B	0.18
Nickel	mg/kg	7.1	E	12.9	E	15.1	E	13.6	E	16	E	13.4	E	52	E	18.3	E	9.6	E	30
Potassium	mg/kg	527	*	1060	*	944	*	1110	*	1100	*	1080	*	883	*	878	*	658	*	---
Selenium	mg/kg	3.1		1.1	B		U		U	0.73	B		U		U	0.84	B		U	3.9
Silver	mg/kg		U		U	0.69	B		U		U		U	0.67	B		U		U	2.0
Sodium	mg/kg	141		177		196		112		233		318		1090		1850		417		---
Thallium	mg/kg	2.3		0.46	B		U		U		U		U		U		U		U	---
Vanadium	mg/kg	9.6		14.9		13.4		15.1		16.1		12.1		21.2		19		13.3		---
Zinc	mg/kg	22.8	NE	31.4	NE	148	NE	34.9	NE	50	NE	47.4	NE	71.3	NE	41.2	NE	25.8	NE	109

Parameter List USEPA Method 6010 & 7471	Sample Location	SB-DUP01 SB-15		SB-DUP02 SB-05	
	Sample Depth (ft)	12-14		0-4	
	Sample Date	1/18/2010		1/19/2010	
	Sample Type	Composite		Composite	
Aluminum	mg/kg	3660	J	5450	
Antimony	mg/kg		UJ		UJ
Arsenic	mg/kg	4.5	J	5.2	
Barium	mg/kg	38	J	53.3	J
Beryllium	mg/kg	0.19	J	0.23	BJ
Cadmium	mg/kg	0.22	J	0.22	B
Calcium	mg/kg	80100	J	85800	
Chromium	mg/kg	13.7	J	30.4	
Cobalt	mg/kg	4.4	J	4.9	J
Copper	mg/kg	28.9	J	82.1	
Iron	mg/kg	12600		11500	
Lead	mg/kg	37.8	J	55.2	
Magnesium	mg/kg	22300	J	22400	J
Manganese	mg/kg	288	J	273	J
Mercury	mg/kg	0.19		0.14	J
Nickel	mg/kg	11.7	J	17.7	J
Potassium	mg/kg	392		939	
Selenium	mg/kg		U		U
Silver	mg/kg	0.76		0.38	
Sodium	mg/kg	316		101	J
Thallium	mg/kg	1.4	J	1.6	
Vanadium	mg/kg	9.7	J	13.1	
Zinc	mg/kg	59.2	J	66.7	J

TABLE 3-5 POLYCHLORINATED BIPHENYL DETECTIONS IN SUBSURFACE SOIL

Parameter List USEPA Method 8082	Sample Location	SB-01						SB-03						SB-04						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (ft)	4-8		8-12		12-14		4-8		8-12		12-14		4-8		8-12		12-14		
	Sample Date	1/19/2010						1/19/2010						1/19/2010						
	Sample Type	Composite						Composite						Composite						
Aroclor-1248	mg/kg	0.17	J		U	0.047		2.8			U		U	32	J	NR		2.4		NA
Aroclor-1254	mg/kg	0.14	J		U		U		U		U		U		U	NR			U	NA
Total PCB	mg/kg	0.31		0		0.047		2.8		0		0		32		0		2.4		0.1
Parameter List USEPA Method 8082	Sample Location	SB-05						SB-05A			SB-05B			SB-05C				Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)		
	Sample Depth (ft)	0-4		4-8		8-12		12-14		2-4			2-4			2-4				
	Sample Date	1/19/2010						1/19/2010												
	Sample Type	Composite						Composite												
	Aroclor-1248	mg/kg	3		0.045			U		U	0.75			4.8		7				
Aroclor-1254	mg/kg		U		U		U		U		U		U		U					
Total PCB	mg/kg	3		0.045		0		0		0.75		4.8		7					0.1	
Parameter List USEPA Method 8082	Sample Location	SB-06						SB-07						SB-08						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (ft)	4-8		8-12		12-14		4-8		8-12		12-14		4-8		8-12		12-14		
	Sample Date	1/19/2010						1/18/2010						1/18/2010						
	Sample Type	Composite						Composite						Composite						
Aroclor-1248	mg/kg		U		U		U	5.3			U		U	0.28			U		U	NA
Aroclor-1254	mg/kg		U		U		U		U		U		U		U		U		U	NA
Total PCB	mg/kg	0		0		0		5.3		0		0		0.28		0		0		0.1
NOTE: USEPA = United States Environmental Protection Agency. ppm = Parts per million. mg/kg = Milligrams per kilogram. J = Estimated value. U = Compound was analyzed for, but not detected. NR = No Recovery NA = PCB = Polychlorinated Biphenyl. Bold values indicate exceedence of standard. Standards taken from Part 375 Unrestricted Soil Cleanup Objectives.																				

TABLE 3-5 POLYCHLORINATED BIPHENYL DETECTIONS IN SUBSURFACE SOIL

Parameter List USEPA Method 8082	Sample Location	SB-09						SB-10						SB-11						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (ft)	4-8		8-12		12-14		4-8		8-12		12-14		4-8		8-12		12-14		
	Sample Date	1/19/2010						1/18/2010						1/18/2010						
	Sample Type	Composite						Composite						Composite						
Aroclor-1248	mg/kg	1.4	J	39		2.3	DP	7.6		0.18		0.091		2.6	J	0.052	J		U	NA
Aroclor-1254	mg/kg		U		U		U		U		U		U		U		U		U	NA
Total PCB	mg/kg	1.4		39		2.3		7.6		0.18		0.091		2.6		0.052		0		0.1
Parameter List USEPA Method 8082	Sample Location	SB-12						SB-13						SB-14						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (ft)	4-8		8-12		12-14		4-8		8-12		12-24		4-8		8-12		12-14		
	Sample Date	1/18/2010						1/18/2010						1/18/2010						
	Sample Type	Composite						Composite						Composite						
Aroclor-1248	mg/kg	0.071			U	1		0.2		0.52		0.045			U		U		U	NA
Aroclor-1254	mg/kg		U		U		U		U		U			U		U		U		NA
Total PCB	mg/kg	0.071		0		1		0.2		0.52		0.045		0		0		0		0.1
Parameter List USEPA Method 8082	Sample Location	SB-15						SB-16						SB-17						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (ft)	4-8		8-12		12-14		4-8		8-12		12-14		4-8		8-12		12-14		
	Sample Date	1/18/2010						1/18/2010						1/19/2010						
	Sample Type	Composite						Composite						Composite						
Aroclor-1248	mg/kg	0.23		23	J	1.2	J	0.54		0.059		0.13		1.4		0.12			U	NA
Aroclor-1254	mg/kg		U		U		U		U		U		U		U	0.068	U		U	NA
Total PCB	mg/kg	0.23		23		1.2		0.54		0.059		0.13		1.4		0.188		0		0.1
NOTE: D = Compounds identified in analysis at secondary dilution factor. P =																				

TABLE 3-5 POLYCHLORINATED BIPHENYL DETECTIONS IN SUBSURFACE SOIL

Parameter List USEPA Method 8082	Sample Location	SB-18					SB-19					SB-20					Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)			
	Sample Depth (ft)	4-8		8-12		12-14		0-4		4-8		8-12		4-8		8-12		12-14		
	Sample Date	1/19/2010						1/19/2010					1/19/2010							
	Sample Type	Composite						Composite					Composite							
Aroclor-1248	mg/kg	NA		0.044		U	5			U		U		U	0.35		28		NA	
Aroclor-1254	mg/kg	NA			U	U		U			U		U		U		U		NA	
Total PCB	mg/kg	0		0.044		0	5		0		0		0		0.35		28		0.1	
Parameter List USEPA Method 8082	Sample Location	MW-01					MW-02					MW-03					Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)			
	Sample Depth (ft)	2-6		6-10		10-14		2-6		6-10		10-14		2-6		6-10		10-14		
	Sample Date	4/27/2010					4/26/2010					4/26/2010								
	Sample Type	Composite					Composite					Composite								
Aroclor-1248	mg/kg	2.4		0.25		0.89		1.7		0.57			16		3.9		0.27		NA	
Aroclor-1254	mg/kg		U		U	U		U			U		U		U		U		NA	
Total PCB	mg/kg	2.4		0.25		0.89		1.7		0.57			16		3.9		0.27		0.1	
Parameter List USEPA Method 8082	Sample Location	SB-DUP01 SB-15		SB-DUP02 SB-05														Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)		
	Sample Depth (ft)	12-14		0-4																
	Sample Date	1/18/2010		1/19/2010																
	Sample Type	Composite		Composite																
Aroclor-1248	mg/kg	1.3	J	2.5															NA	
Aroclor-1254	mg/kg		U		U														NA	
Total PCB	mg/kg	1.3		2.5															0.1	

TABLE 3-6 PESTICIDE DETECTIONS IN SUBSURFACE SOIL

Parameter List USEPA Method 8081	Sample Location	SB-01						SB-03						SB-04						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (ft)	4-8		8-12		12-14		4-8		8-12		12-14		4-8		8-12		12-14		
	Sample Date	1/19/2010						1/19/2010						1/19/2010						
	Sample Type	Composite						Composite						Composite						
4,4'-DDD	mg/kg	0.0077	J		U		U		U		U		U		U	NR			U	0.0033
4,4'-DDE	mg/kg		U		U		U		U		U		U		U	NR			U	0.0033
4,4'-DDT	mg/kg	0.0087	J		U		U		U		U		U		U	NR			U	0.0033
alpha-Chlordane	mg/kg		U		U		U		U		U		U		U	NR			U	0.094
beta-BHC	mg/kg		U		U		U		U		U		U		U	NR			U	0.036
delta-BHC	mg/kg	0.0023	J		U		U	0.075			U		U	1.8		NR		0.15		0.04
Dieldrin	mg/kg		U		U		U		U		U		U		U	NR			U	0.005
Endosulfan I	mg/kg		U		U		U		U		U		U		U	NR			U	2.4
Endosulfan sulfate	mg/kg	0.02	J		U		U		U		U		U		U	NR			U	2.4
Endrin	mg/kg		U		U		U		U		U		U		U	NR			U	0.014
Endrin aldehyde	mg/kg	0.008	J		U		U		U		U		U		U	NR			U	---
Endrin ketone	mg/kg	0.016	J		U		U		U		U		U		U	NR			U	---
gamma-BHC (Lindane)	mg/kg		U		U		U		U		U		U		U	NR			U	0.1
gamma-Chlordane	mg/kg	0.0027	J		U		U		U		U		U		U	NR			U	---
Heptachlor	mg/kg		U		U		U		U		U		U		U	NR			U	0.042
Heptachlor epoxide	mg/kg	0.0027	J		U	0.0023	P	0.13			U		U	1.3		NR		0.13		---
Methoxychlor	mg/kg		U		U		U		U		U		U		U	NR			U	---

NOTE: USEPA = United States Environmental Protection Agency.
ppm = Parts per million.
4,4'-DDD = 4,4'-Dichlorodiphenyldichloroethane
mg/kg = Milligrams per kilogram.
J = Estimated value.
U = Compound was analyzed for, but not detected.
NR = No Recovery
4,4'-DDE = 4,4'-Dichlorodiphenyldichloroethylene
4,4'-DDT = 4,4'-Dichlorodiphenyltrichloroethane
--- =
P =
Bold values indicate exceedence of standard.
Standards taken from Part 375 Unrestricted Soil Cleanup Objectives.

TABLE 3-6 PESTICIDE DETECTIONS IN SUBSURFACE SOIL

TABLE 3-6 PESTICIDE DETECTIONS IN SUBSURFACE SOIL																
Parameter List USEPA Method 8081	Sample Location	SB-05						SB-05A		SB-05B		SB-05C		Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)		
	Sample Depth (ft)	0-4		4-8		8-12		12-14		2-4		2-4				
	Sample Date	1/19/2010						1/19/2010								
	Sample Type	Composite						Composite								
4,4'-DDD	mg/kg	0.013	J		U		U		UJ	0.03	J	0.035	J	0.0033		
4,4'-DDE	mg/kg	0.03	J		U		U		UJ	0.045	J	0.062	J	0.0033		
4,4'-DDT	mg/kg	0.034	J		U		U		U	0.013	J	0.044	J	0.051	0.0033	
alpha-Chlordane	mg/kg	0.014	J		U		U		U	0.0022	J		UJ		0.094	
beta-BHC	mg/kg	0.03	J		U		U		U	0.0065	J	0.0038	J	0.0029	0.036	
delta-BHC	mg/kg		U		U		U		UJ		UJ		UJ		0.04	
Dieldrin	mg/kg	0.011	J		U		U		UJ	0.019	J	0.023	J		0.005	
Endosulfan I	mg/kg	0.005	J		U		U		U	0.0024	J	0.0075	J	0.0084	2.4	
Endosulfan sulfate	mg/kg	0.025	J	0.0038	J	0.0042			U	0.0068	J	0.0057	J	0.01	2.4	
Endrin	mg/kg	0.0093	J		U		U		U		UJ		UJ	0.0064	0.014	
Endrin aldehyde	mg/kg	0.019			U		U		U	0.0069	J	0.0059	J	0.0061	J	
Endrin ketone	mg/kg	0.0098	J		U		U		U	0.01	J		UJ		J	
gamma-BHC (Lindane)	mg/kg	0.0099	J		U		U		U	0.0022	J	0.0019	J	0.0052	J	
gamma-Chlordane	mg/kg		U	0.01		0.0066	J		U		UJ		UJ		U	
Heptachlor	mg/kg	0.0043	J		U		U		U		UJ		UJ		U	
Heptachlor epoxide	mg/kg		U		U		U		U		UJ		UJ		U	
Methoxychlor	mg/kg	0.065	J		U		U		U		UJ		UJ		U	

Parameter List USEPA Method 8081	Sample Location	SB-06						SB-07						SB-08						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)	
	Sample Depth (ft)	4-8		8-12		12-14		4-8		8-12		12-14		4-8		8-12		12-14			
	Sample Date	1/19/2010						1/18/2010						1/18/2010							
	Sample Type	Composite						Composite						Composite							
4,4'-DDD	mg/kg		U		U		U		U		U		U		U		U		U	0.0033	
4,4'-DDE	mg/kg		U		U		U		U		U		U		U		U		U	0.0033	
4,4'-DDT	mg/kg		U		U		U		U		U		U		U		U		U	0.0033	
alpha-Chlordane	mg/kg		U		U		U		U		U		U		U		U		U	0.094	
beta-BHC	mg/kg		U		U		U		U		U		U		U		U		U	0.036	
delta-BHC	mg/kg		U		U		U	0.33			U		U		U		U		U	0.04	
Dieldrin	mg/kg		U		U		U		U		U		U		U		U		U	0.005	
Endosulfan I	mg/kg		U		U		U		U		U		U		U		U		U	2.4	
Endosulfan sulfate	mg/kg		U		U		U		U		U		U		U		U		U	2.4	
Endrin	mg/kg		U		U		U		U		U		U		U		U		U	0.014	
Endrin aldehyde	mg/kg		U		U		U		U		U		U		U		U		U	---	
Endrin ketone	mg/kg		U		U		U		U		U		U		U		U		U	---	
gamma-BHC (Lindane)	mg/kg		U		U		U		U		U		U		U		U		U	0.1	
gamma-Chlordane	mg/kg		U		U		U		U		U		U		U		U		U	---	
Heptachlor	mg/kg		U		U		U		U		U		U		U		U		U	0.042	
Heptachlor epoxide	mg/kg		U		U		U	0.32			U		U		U		U		U	---	
Methoxychlor	mg/kg		U		U		U		U		U		U		U		U		U	---	

TABLE 3-6 PESTICIDE DETECTIONS IN SUBSURFACE SOIL

Parameter List USEPA Method 8081	Sample Location	SB-09						SB-10						SB-11						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (ft)	4-8		8-12		12-14		4-8		8-12		12-14		4-8		8-12		12-14		
	Sample Date	1/19/2010						1/18/2010						1/18/2010						
	Sample Type	Composite						Composite						Composite						
4,4'-DDD	mg/kg		U		U	0.01	J		U		U		U		U		U		U	0.0033
4,4'-DDE	mg/kg		U		U	0.012			U		U		U	0.04			U		U	0.0033
4,4'-DDT	mg/kg		U		U	0.012			U		U		U	0.044			U		U	0.0033
alpha-Chlordane	mg/kg		U		U		U		U		U		U		U		U		U	0.094
beta-BHC	mg/kg		U		U		U		U		U		U	0.0078	J		U		U	0.036
delta-BHC	mg/kg	0.098		1.3			U	0.37		0.0064		0.0031		0.3	D		U		U	0.04
Dieldrin	mg/kg		U		U	0.0058	J		U		U		U	0.018	J		U		U	0.005
Endosulfan I	mg/kg		U		U	0.0046	J		U		U		U	0.013	J		U		U	2.4
Endosulfan sulfate	mg/kg		U		U		U		U		U		U		U		U		U	2.4
Endrin	mg/kg		U		U		U		U		U		U		U		U		U	0.014
Endrin aldehyde	mg/kg		U		U		U		U		U		U		U		U		U	---
Endrin ketone	mg/kg		U		U		U		U		U		U		U		U		U	---
gamma-BHC (Lindane)	mg/kg		U		U		U		U		U		U		U		U		U	0.1
gamma-Chlordane	mg/kg		U		U	0.0028	J		U		U		U		U		U		U	---
Heptachlor	mg/kg		U		U	0.0078	J		U		U		U	0.02	J		U		U	0.042
Heptachlor epoxide	mg/kg	0.079		1.1			U	0.36		0.0092		0.0044		0.2	D		U		U	---
Methoxychlor	mg/kg		U		U		U		U		U		U		U		U		U	---

Parameter List USEPA Method 8081	Sample Location	SB-12						SB-13						SB-14						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)	
	Sample Depth (ft)	4-8		8-12		12-14		4-8		8-12		12-24		4-8		8-12		12-14			
	Sample Date	1/18/2010						1/18/2010						1/18/2010							
	Sample Type	Composite						Composite						Composite							
4,4'-DDD	mg/kg		U		U		U		U		U		U		U		U		U	0.0033	
4,4'-DDE	mg/kg		U		U		U		U		U		U		U		U		U	0.0033	
4,4'-DDT	mg/kg		U		U		U		U		U		U		U		U		U	0.0033	
alpha-Chlordane	mg/kg		U		U		U		U		U		U		U		U		U	0.094	
beta-BHC	mg/kg		U		U		U		U		U		U		U		U		U	0.036	
delta-BHC	mg/kg		U		U	0.018		0.0042		0.012			U		U		U		U	0.04	
Dieldrin	mg/kg		U		U		U		U		U		U		U		U		U	0.005	
Endosulfan I	mg/kg		U		U		U		U		U		U		U		U		U	2.4	
Endosulfan sulfate	mg/kg		U		U		U		U		U		U		U	0.01			U	2.4	
Endrin	mg/kg		U		U		U		U		U		U		U		U		U	0.014	
Endrin aldehyde	mg/kg		U		U		U		U		U		U		U		U		U	---	
Endrin ketone	mg/kg		U		U		U		U		U		U		U		U		U	---	
gamma-BHC (Lindane)	mg/kg		U		U		U		U		U		U		U		U		U	0.1	
gamma-Chlordane	mg/kg		U		U		U		U		U		U		U		U		U	---	
Heptachlor	mg/kg		U		U		U		U		U		U		U		U		U	0.042	
Heptachlor epoxide	mg/kg		U		U	0.047		0.0097		0.026			U		U		U		U	---	
Methoxychlor	mg/kg		U		U		U		U		U		U		U		U		U	---	

TABLE 3-6 PESTICIDE DETECTIONS IN SUBSURFACE SOIL

TABLE 3-6 PESTICIDE DETECTIONS IN SUBSURFACE SOIL																				
Parameter List USEPA Method 8081	Sample Location	SB-15						SB-16						SB-17						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (ft)	4-8		8-12		12-14		4-8		8-12		12-14		4-8		8-12		12-14		
	Sample Date	1/18/2010						1/18/2010						1/19/2010						
	Sample Type	Composite						Composite						Composite						
4,4'-DDD	mg/kg	0.01	J		U		U		U		U		U		U		U		U	0.0033
4,4'-DDE	mg/kg	0.005			U		U		U		U		U		U		U		U	0.0033
4,4'-DDT	mg/kg	0.0099			U		U		U		U		U		U		U		U	0.0033
alpha-Chlordane	mg/kg		U		U		U		U		U		U		U		U		U	0.094
beta-BHC	mg/kg		U		U		U		U		U		U		U		U		U	0.036
delta-BHC	mg/kg	0.0032	J	2.1		0.13		0.012			U	0.0025		0.031			U		U	0.04
Dieldrin	mg/kg		U		U		U		U		U		U		U		U		U	0.005
Endosulfan I	mg/kg		U		U		U		U		U		U		U		U		U	2.4
Endosulfan sulfate	mg/kg		U		U		U		U		U		U		U		U		U	2.4
Endrin	mg/kg		U		U		U		U		U		U		U		U		U	0.014
Endrin aldehyde	mg/kg		U		U		U		U		U		U		U		U		U	---
Endrin ketone	mg/kg		U		U		U		U		U		U		U		U		U	---
gamma-BHC (Lindane)	mg/kg		U		U		U		U		U		U		U		U		U	0.1
gamma-Chlordane	mg/kg	0.004	J		U		U		U		U		U		U		U		U	---
Heptachlor	mg/kg		U		U		U	0.0025			U		U		U		U		U	0.042
Heptachlor epoxide	mg/kg	0.011		1.4		0.067		0.03		0.0031		0.0064		0.072		0.0065			U	---
Methoxychlor	mg/kg		U		U		U		U		U		U		U		U		U	---
Parameter List USEPA Method 8081	Sample Location	SB-18						SB-19						SB-20						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (ft)	4-8		8-12		12-14		0-4		4-8		8-12		4-8		8-12		12-14		
	Sample Date	1/19/2010						1/19/2010						1/19/2010						
	Sample Type	Composite						Composite						Composite						
4,4'-DDD	mg/kg	NR			U		U	0.045	J		U		U		U		U		U	0.0033
4,4'-DDE	mg/kg	NR			U		U	0.046			U		U		U	0.0079		0.22		0.0033
4,4'-DDT	mg/kg	NR			U		U	0.061			U		U		U	0.0052		0.19		0.0033
alpha-Chlordane	mg/kg	NR			U		U		U		U		U		U		U		U	0.094
beta-BHC	mg/kg	NR			U		U	0.0034	J		U		U		U		U		U	0.036
delta-BHC	mg/kg	NR			U		U		U		U		U		U		U		U	0.04
Dieldrin	mg/kg	NR			U		U	0.023	J		U		U		U		U		U	0.005
Endosulfan I	mg/kg	NR			U		U	0.01	J		U		U		U		U	0.043	J	2.4
Endosulfan sulfate	mg/kg	NR			U		U		U		U		U		U		U		U	2.4
Endrin	mg/kg	NR			U		U	0.0064	J		U		U		U		U		U	0.014
Endrin aldehyde	mg/kg	NR			U		U	0.0084	J		U		U		U		U		U	---
Endrin ketone	mg/kg	NR			U		U		U		U		U		U		U		U	---
gamma-BHC (Lindane)	mg/kg	NR			U		U		U		U		U		U		U		U	0.1
gamma-Chlordane	mg/kg	NR			U		U		U		U		U		U		U		U	---
Heptachlor	mg/kg	NR			U		U		U		U		U		U		U		U	0.042
Heptachlor epoxide	mg/kg	NR		0.002			U		U		U		U		U		U		U	---
Methoxychlor	mg/kg	NR			U		U		U		U		U		U		U		U	---

TABLE 3-6 PESTICIDE DETECTIONS IN SUBSURFACE SOIL

Parameter List USEPA Method 8081	Sample Location	MW-01				MW-02				MW-03				Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)		
	Sample Depth (ft)	2-6		6-10		10-14		2-6		6-10		10-14				
	Sample Date	4/27/2010				4/26/2010				4/26/2010						
	Sample Type	Composite				Composite				Composite						
4,4'-DDD	mg/kg		U	U		U	0.0087		U	U		U		U	0.0033	
4,4'-DDE	mg/kg		U	U		U	0.0093		U	U	0.1		U	U	0.0033	
4,4'-DDT	mg/kg		U	U		U	0.0093	P	U	U	0.11		U	U	0.0033	
alpha-Chlordane	mg/kg		U	U		U		U	U	U		U	U	U	0.094	
beta-BHC	mg/kg		U	U		U	0.0021		0.0022			U	U	U	0.036	
delta-BHC	mg/kg	0.034		U		U	0.017		0.0061		U	0.22	0.054		U	0.04
Dieldrin	mg/kg		U	U		U		U		U		U		U	U	0.005
Endosulfan I	mg/kg		U	U		U		U		U		U		U	U	2.4
Endosulfan sulfate	mg/kg		U	0.0044	P	U		U		U		U		U	U	2.4
Endrin	mg/kg		U	U		U		U		U		U		U	U	0.014
Endrin aldehyde	mg/kg		U	U		U		U		U		U		U	U	---
Endrin ketone	mg/kg		U	U		U		U		U		U		U	U	---
gamma-BHC (Lindane)	mg/kg		U	U		U		U		U		U		U	U	0.1
gamma-Chlordane	mg/kg		U	U	0.0031	P	0.011	P	0.015		U	0.1	P		U	---
Heptachlor	mg/kg		U	U		U		U		U		U		U	U	0.042
Heptachlor epoxide	mg/kg		U	U		U		U		U		0.13	P	0.031	P	---
Methoxychlor	mg/kg		U	U		U		U		U		U		U	U	---
Parameter List USEPA Method 8081	Sample Location	SB-DUP01 SB-15		SB-DUP02 SB-05												Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (ft)	12-14		0-4												
	Sample Date	1/18/2010		1/19/2010												
	Sample Type	Composite		Composite												
4,4'-DDD	mg/kg		U	0.0075	J											
4,4'-DDE	mg/kg		U	0.022	J											
4,4'-DDT	mg/kg		U	0.026	J											
alpha-Chlordane	mg/kg		U	0.0048	J											
beta-BHC	mg/kg		U	0.02												
delta-BHC	mg/kg	0.11														
Dieldrin	mg/kg		U	0.0084	J											
Endosulfan I	mg/kg		U	0.0033	J											
Endosulfan sulfate	mg/kg		U	0.014	J											
Endrin	mg/kg		U	0.0066	J											
Endrin aldehyde	mg/kg		U	0.0089	J											
Endrin ketone	mg/kg		U	0.0056	J											
gamma-BHC (Lindane)	mg/kg		U	0.0084	J											
gamma-Chlordane	mg/kg	0.016	J													
Heptachlor	mg/kg		U													
Heptachlor epoxide	mg/kg	0.052														
Methoxychlor	mg/kg		U	0.046												

TABLE 3-7 VOLATILE ORGANIC COMPOUND DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 8260	Sample Location	SS-01				SS-02				SS-03				Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)					
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24							
	Sample Date	1/12/2010				1/12/2010				1/12/2010									
	Sample Type	Composite				Composite				Composite									
1,1,1-Trichloroethane	mg/kg		U		U		U		U		U		U	0.68					
2-Butanone	mg/kg		U		U		U		U		U		U	---					
Acetone	mg/kg		U		U		U		U		U		U	0.05					
Carbon disulfide	mg/kg		U		U		U		U		U		U	---					
Chloroform	mg/kg		U		U		U		U		U		U	0.37					
cis-1,2-Dichloroethene	mg/kg		U		U		U		U		U		U	0.25					
Methylene chloride	mg/kg	0.005	J	0.0051		U	0.0046	J	0.006		0.0095		0.0044	J	0.002	J	0.0045	J	0.05
Naphthalene	mg/kg		U		U		U		U		U		U		U		U		12
Tetrachloroethene	mg/kg		U		U		U		U		U		U		U		U		1.3
Trichloroethene	mg/kg		U		U		U		U		U		U		U		U		0.47

Parameter List USEPA Method 8260	Sample Location	SS-04				SS-05				SS-06				Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)					
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24							
	Sample Date	1/12/2010				1/12/2010				1/12/2010									
	Sample Type	Composite				Composite				Composite									
1,1,1-Trichloroethane	mg/kg		U		U		U		U		U		U		U	0.68			
2-Butanone	mg/kg		U		U		U		U		U		U		U	---			
Acetone	mg/kg		U		U		U		U		U		U		U	0.05			
Carbon disulfide	mg/kg		U		U		U		U		U		U		U	---			
Chloroform	mg/kg		U		U		U		U		U		U		U	0.37			
cis-1,2-Dichloroethene	mg/kg		U		U		U		U		U		U		U	0.25			
Methylene chloride	mg/kg		U	0.0017	J	0.0029	J	0.0015	J	0.0087			0.0014	J	0.0051		U	0.05	
Naphthalene	mg/kg		U		U		U		U		U		U		U		U		12
Tetrachloroethene	mg/kg		U		U		U		U		U		U		U		U		1.3
Trichloroethene	mg/kg		U		U		U		U		U		U		U		U		0.47

NOTE: USEPA = United States Environmental Protection Agency.

ppm = Parts per million.

mg/kg = Milligrams per kilogram.

U = Compound was note analyzed for, but not detected.

--- =

J = Estimated value.

Standards taken from Part 375 Unrestricted Soil Cleanup Objectives

TABLE 3-7 VOLATILE ORGANIC COMPOUND DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 8260	Sample Location	SS-07					SS-08					SS-09					Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24	0-6		6-12		12-24	0-6		6-12		12-24	
	Sample Date	1/12/2010					1/13/2010					1/13/2010					
	Sample Type	Composite					Composite					Composite					
1,1,1-Trichloroethane	mg/kg		U		U		U		U		U		U		U	0.68	
2-Butanone	mg/kg		U		U		U		U		U		U		U	---	
Acetone	mg/kg		U		U		U		U		U		U		U	0.05	
Carbon disulfide	mg/kg		U		U		U		U		U		U		U	---	
Chloroform	mg/kg		U		U		U		U		U		U		U	0.37	
cis-1,2-Dichloroethene	mg/kg		U		U		U		U		U		U		U	0.25	
Methylene chloride	mg/kg	0.0023	J	0.0055	J		U		U		U		U		U	0.05	
Naphthalene	mg/kg		U		U		U		U		U		U		U	12	
Tetrachloroethene	mg/kg		U		U		U		U		U		U		U	1.3	
Trichloroethene	mg/kg		U		U		U		U		U		U		U	0.47	
Parameter List USEPA Method 8260	Sample Location	SS-10					SS-11					SS-12					Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24	0-6		6-12		12-24	0-6		6-12		12-24	
	Sample Date	1/13/2010					1/13/2010					1/13/2010					
	Sample Type	Composite					Composite					Composite					
1,1,1-Trichloroethane	mg/kg		U	NR		NR		U		U		U		U		U	0.68
2-Butanone	mg/kg		U	NR		NR		U		U		U		U		U	---
Acetone	mg/kg		U	NR		NR		U		U		U		U		U	0.05
Carbon disulfide	mg/kg		U	NR		NR		U		U		U		U		U	---
Chloroform	mg/kg		U		U		U		U		U		U		U	0.37	
cis-1,2-Dichloroethene	mg/kg		U	NR		NR		U		U		U		U		U	0.25
Methylene chloride	mg/kg		U	NR		NR		U		U		U		U		U	0.05
Naphthalene	mg/kg		U		U		U		U		U		U		U	12	
Tetrachloroethene	mg/kg		U	NR		NR		U		U		U		U		U	1.3
Trichloroethene	mg/kg		U	NR		NR		U		U		U		U		U	0.47
Parameter List USEPA Method 8260	Sample Location	SS-13					SS-14					SS-15					Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24	0-6		6-12		12-24	0-6		6-12		12-24	
	Sample Date	1/13/2010					1/13/2010					1/13/2010					
	Sample Type	Composite					Composite					Composite					
1,1,1-Trichloroethane	mg/kg		U	NR		NR		U		U		U		U	NR		0.68
2-Butanone	mg/kg		U	NR		NR		U		U		U		U	NR		---
Acetone	mg/kg		U	NR		NR		U		U		U		U	NR		0.05
Carbon disulfide	mg/kg		U	NR		NR		U		U		U		U	NR		---
Chloroform	mg/kg		U		U		U		U		U		U		U		0.37
cis-1,2-Dichloroethene	mg/kg		U	NR		NR		U		U		U	0.0013	J	NR		0.25
Methylene chloride	mg/kg		U	NR		NR		U		U		U		U	NR		0.05
Naphthalene	mg/kg		U		U		U		U		U		U		U		12
Tetrachloroethene	mg/kg		U	NR		NR		U		U		U	0.012		NR		1.3
Trichloroethene	mg/kg		U	NR		NR		U		U		U	0.0018	J	0.0032	J	0.47

NOTE: NR = No Recovery.

NOTE: NR = No Recovery.

TABLE 3-7 VOLATILE ORGANIC COMPOUND DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 8260	Sample Location	SS-16						SS-17						SS-18						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/13/2010						1/13/2010						1/13/2010						
	Sample Type	Composite						Composite						Composite						
1,1,1-Trichloroethane	mg/kg		U		U		NR			U		U		U		U		U	J	0.68
2-Butanone	mg/kg		U		U		NR			U		U		U		U		U	J	---
Acetone	mg/kg		U		U		NR			U		U		U		U		U	J	0.05
Carbon disulfide	mg/kg		U		U		NR			U		U		U		U		U	J	---
Chloroform	mg/kg		U		U			U		U		U		U		U		U	U	0.37
cis-1,2-Dichloroethene	mg/kg		U		U		NR			U		U		U		U		U	J	0.25
Methylene chloride	mg/kg		U		U		NR			U		U		U		U		U	J	0.05
Naphthalene	mg/kg		U		U			U		U		U		U		U		U	U	12
Tetrachloroethene	mg/kg		U		U		NR			U		U		U		U		U	J	1.3
Trichloroethene	mg/kg		U		U		NR			U		U		U		U		U	J	0.47
Parameter List USEPA Method 8260	Sample Location	SS-19						SS-20						SS-21						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/13/2010						1/13/2010						1/13/2010						
	Sample Type	Composite						Composite						Composite						
1,1,1-Trichloroethane	mg/kg		U		U		J			U	0.0023	J		U		U		J	NR	0.68
2-Butanone	mg/kg		U		U		J			U		U		U		U		J	NR	---
Acetone	mg/kg		U		U		J			U		U		U		U		J	NR	0.05
Carbon disulfide	mg/kg		U		U		J			U		U		U		U		J	NR	---
Chloroform	mg/kg		U		U		U			U		U		U		U		U	U	0.37
cis-1,2-Dichloroethene	mg/kg		U		U		J			U		U		U		U		J	NR	0.25
Methylene chloride	mg/kg		U		U		J			U		U		U		U		J	NR	0.05
Naphthalene	mg/kg		U		U		U			U		U		U		U		U	U	12
Tetrachloroethene	mg/kg		U		U		J			U		U		U		U		J	NR	1.3
Trichloroethene	mg/kg		U		U		J			U		U		U		U		J	NR	0.47
Parameter List USEPA Method 8260	Sample Location	SS-22						SS-23						SS-24						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/13/2010						1/13/2010						1/13/2010						
	Sample Type	Composite						Composite						Composite						
1,1,1-Trichloroethane	mg/kg		U		U		U			U		U		U		U		U	U	0.68
2-Butanone	mg/kg		U		U		0.023			U		U		U		U		U	U	---
Acetone	mg/kg		U		U		0.078			U		U		0.0082	J		U		U	0.05
Carbon disulfide	mg/kg		U		U		U			U		U		0.0022	J		U		U	---
Chloroform	mg/kg		U		U		U			U		U		U		U		U	U	0.37
cis-1,2-Dichloroethene	mg/kg		U		U		U			U		U		U		U		U	U	0.25
Methylene chloride	mg/kg		U		U		U			U		U		U		U		U	U	0.05
Naphthalene	mg/kg		U		U		U			U		U		U		U		U	U	12
Tetrachloroethene	mg/kg		U		U		U			U		U		U		U		U	U	1.3
Trichloroethene	mg/kg		U		U		U			U		U		U		U		U	U	0.47
Parameter List USEPA Method 8260	Sample Location	SS-25						SS-26						SS-27						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	4/26/2010						4/26/2010						4/26/2010						
	Sample Type	Composite						Composite						Composite						
1,1,1-Trichloroethane	mg/kg		U		U		U			U		U		U		U		U	U	0.68
2-Butanone	mg/kg		U		U		U			U		U		U		U		U	U	---
Acetone	mg/kg		U		U		U			U		U		U		U		U	U	0.05
Carbon disulfide	mg/kg		U		U		U			U		U		U		U		U	U	---
Chloroform	mg/kg		U		U		U			U		U		U		U		U	U	0.37
cis-1,2-Dichloroethene	mg/kg		U		U		U			U		U		U		U		U	U	0.25
Methylene chloride	mg/kg		U		U		U			U		U		U		U		U	U	0.05
Naphthalene	mg/kg		U		U		U			U		U		U		U		U	U	12
Tetrachloroethene	mg/kg		U		U		U			U		U		U		U		U	U	1.3
Trichloroethene	mg/kg		U		U		U			U		U		0.0016	J		U		U	0.47

TABLE 3-7 VOLATILE ORGANIC COMPOUND DETECTIONS IN SURFACE SOIL																					
Parameter List USEPA Method 8260	Sample Location	SS-28					SS-29					SS-30					Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)				
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24			
	Sample Date	4/26/2010					4/26/2010					4/26/2010									
	Sample Type	Composite					Composite					Composite									
1,1,1-Trichloroethane	mg/kg		U		U		U		U		U		U		U		U		0.68		
2-Butanone	mg/kg		U		U		U		U		U		U		U	0.01		0.0072		---	
Acetone	mg/kg		U		U		U		U		U		U		U	0.038		0.019		0.05	
Carbon disulfide	mg/kg		U		U		U		U		U		U		U		U		U	---	
Chloroform	mg/kg		U		U		U		U		U		U		U		U		U		
cis-1,2-Dichloroethene	mg/kg		U		U		U		U		U		U		U		U		U	0.25	
Methylene chloride	mg/kg		U		U		U		U		U		U		U		U		U	0.05	
Naphthalene	mg/kg		U		U		U		U		U		U		U		U		U	12	
Tetrachloroethene	mg/kg		0.0024	J	0.0018	J		U	0.0025	J	0.0018	J		U	0.002	J	0.002	BJ	0.002	BJ	1.3
Trichloroethene	mg/kg		U		U		U		U		U		U		U		U		U	0.47	
VOC Parameter List USEPA Method 8260	Sample Location	SS-31					SS-DUP SS-06	SS-DUP02 SS-12	SS-DUP03 SS-17	SS-DUP-01 SS-26		Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)									
	Sample Depth (in)	0-6		6-12		12-24		6-12		12-24			0-6		12-14						
	Sample Date	4/26/2010					1/12/2010		1/13/2010				1/13/2010		4/26/2010						
	Sample Type	Composite					Composite		Composite				Composite		Composite						
1,1,1-Trichloroethane	mg/kg		U		U		U		U		U		U		U		U		0.68		
2-Butanone	mg/kg		U		U		U		U		U		U		U		U		---		
Acetone	mg/kg		U		U		U		U		U		U		U		U		0.05		
Carbon disulfide	mg/kg		U		U		U		U		U		U		U		U		---		
Chloroform	mg/kg		0.0041	BJ		U	0.0012	J		U		U		U		U		U		0.37	
cis-1,2-Dichloroethene	mg/kg		U		U		U		U		U		U		U		U		0.25		
Methylene chloride	mg/kg		U		U		U		U		U		U		U		U		0.05		
Naphthalene	mg/kg		0.0017	BJ		U		U					U		U		U		12		
Tetrachloroethene	mg/kg		U		0.0015	BJ		U		U		U		U	0.0015	BJ		U		1.3	
Trichloroethene	mg/kg		U		U		U		U		U		U		U		U		0.47		
NOTE : B = Analyte found in in associated method blank, as well as sample.																					

NOTE : B = Analyte found in in associated method blank, as well as sample.

TABLE 3-8 SEMIVOLATILE ORGANIC COMPOUND DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 8270	Sample Location	SS-01						SS-02						SS-03						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)	
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24			
	Sample Date	1/12/2010						1/12/2010						1/12/2010							
	Sample Type	Composite						Composite						Composite							
2,4-Dimethylphenol	mg/kg		U			U		U		U		U		U		U		U		---	
2-Methylnaphthalene	mg/kg		U		U		U		U		U	0.046	J		0.48		0.13	J	0.094	J	---
3,3'-Dichlorobenzidine	mg/kg		U		U		U		U		U		U		U		U		U		---
4-Chloroaniline	mg/kg		U		U		U		U		U		U		U		U		U		---
4-Methylphenol	mg/kg		U		U		U		U		U		U		U		U		U		---
Acenaphthene	mg/kg		U		U		U	0.046	J	0.053	J	0.075	J		0.87		0.08	J		U	20
Acenaphthylene	mg/kg		U		U		U	0.13	J	0.34	J	0.22	J		0.33	J	0.18	J	0.15	J	100
Anthracene	mg/kg		U		U		U	0.16	J	0.41		0.29	J		3.2		0.36	J	0.14	J	100
Benzo(a)anthracene	mg/kg	0.061	J		U		U	0.41		1.2		0.67			3.8		0.69		0.33	J	1
Benzo(a)pyrene	mg/kg	0.063	J		U		U	0.42		1.5		0.74			2.7		0.62		0.33	J	1
Benzo(b)fluoranthene	mg/kg	0.098	J		U		U	0.61		1.9		0.91			3.3		0.78		0.46		1
Benzo(g,h,i)perylene	mg/kg	0.053	J		U		U	0.3	J	1.2		0.57			1.4		0.41		0.25	J	100
Benzo(k)fluoranthene	mg/kg		U		U		U	0.3	J	0.71		0.47			1.8		0.42		0.21	J	0.8
Bis(2-ethylhexyl)phthalate	mg/kg		U		U		U		U		U		U		U		U		U		---
Butylbenzylphthalate	mg/kg		U		U		U		U		U		U		U		U		U		---
Carbazole	mg/kg		U		U		U	0.054	J	0.094	J	0.11	J		1.2		0.08	J		U	---
Chrysene	mg/kg	0.072	J		U		U	0.47		1.3		0.7			3.6		0.73		0.37	J	1
Dibenzo(a,h)anthracene	mg/kg		U		U		U	0.065	J	0.24	J	0.13	J		0.42		0.11	J	0.06	J	0.33
Dibenzofuran	mg/kg		U		U		U		U		U	0.056	J		1.2		0.083	J		U	---
Dimethylphthalate	mg/kg		U		U		U		U		U		U		U		U		U		---
Di-n-butylphthalate	mg/kg	0.17	J	0.098	J	0.13	J	0.14	J	0.099	J	0.072	J	0.15	J	0.12	J	0.16	J		---
Fluoranthene	mg/kg	0.12	J		U		U	0.75		2		1.2			8.7	D	1.3		0.64		100
Fluorene	mg/kg		U		U		U	0.053	J	0.081	J	0.1	J		2		0.14	J	0.046	J	30
Indeno(1,2,3-cd)pyrene	mg/kg	0.046	J		U		U	0.29	J	1.1		0.51			1.5		0.4		0.23	J	0.5
Naphthalene	mg/kg		U		U		U		U		U	0.094	J		0.38	J	0.075	J		U	12
Pentachlorophenol	mg/kg		U		U		U		U		U		U		U		U		U		0.8
Phenanthrene	mg/kg		U		U		U	0.43		0.74		0.7			9.4	D	0.85		0.31	J	100
Phenol	mg/kg		U		U		U		U		U		U		U		U		U		0.33
Pyrene	mg/kg	0.1	J		U		U	0.67		1.9		1.1			5.7		1.1		0.54		100
NOTE: USEPA = United States Environmental Protection Agency. ppm = Parts per million. U = Compound was analyzed for, but not detected. --- = J = Estimated Value. D = Dilution of sample or extract. Bold values indicate exceedence of standard Standards taken from Part 375 Unrestricted Soil Cleanup Objectives																					

TABLE 3-8 SEMIVOLATILE ORGANIC COMPOUND DETECTIONS IN SURFACE SOIL DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 8270	Sample Location	SS-04						SS-05						SS-06						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/12/2010						1/12/2010						1/12/2010						
	Sample Type	Composite						Composite						Composite						
2,4-Dimethylphenol	mg/kg		U			U		U		U		U		U		U		U	---	
2-Methylnaphthalene	mg/kg	0.069	J	0.04	J	0.078	J	0.061	J	0.055	J	0.17	J		U		U		U	---
3,3'-Dichlorobenzidine	mg/kg		U		U		U		U		U		U		U		U		U	---
4-Chloroaniline	mg/kg		U		U		U		U		U		U		U		U		U	---
4-Methylphenol	mg/kg		U		U		U		U		U		U		U		U		U	---
Acenaphthene	mg/kg	0.056	J	0.053	J	0.063	J	0.1	J	0.045	J	0.088	J		U		U		U	20
Acenaphthylene	mg/kg	0.59		0.34	J	0.57		0.22	J	0.33	J	0.42		0.21	J	0.31	J	0.26	J	100
Anthracene	mg/kg	0.6		0.36	J	0.6		0.35	J	0.33	J	0.41		0.19	J	0.28	J	0.15	J	100
Benzo(a)anthracene	mg/kg	1.7		0.99		1.5		0.77		0.87		1.6		0.6		0.73		0.49		1
Benzo(a)pyrene	mg/kg	1.6		0.88		1.3		0.75		0.84		1.7		0.54		0.77		0.53		1
Benzo(b)fluoranthene	mg/kg	2.1		1.1		1.8		0.97		1		2.1		0.77		0.91		0.67		1
Benzo(g,h,i)perylene	mg/kg	1		0.54		0.85		0.51		0.53		1.2		0.36	J	0.55		0.35	J	100
Benzo(k)fluoranthene	mg/kg	0.92		0.5		0.66		0.46		0.55		1.1		0.32	J	0.35	J	0.32	J	0.8
Bis(2-ethylhexyl)phthalate	mg/kg		U		U		U		U		U		U		U		U		U	---
Butylbenzylphthalate	mg/kg		U		U		U		U		U		U		U		U		U	---
Carbazole	mg/kg	0.088	J	0.076	J	0.11	J	0.094	J	0.061	J	0.086	J	0.042	J	0.062	J		U	---
Chrysene	mg/kg	1.8		0.93		1.5		0.78		0.89		1.5		0.64		0.8		0.5		1
Dibenzo(a,h)anthracene	mg/kg	0.27	J	0.16	J	0.23	J	0.13	J	0.15	J	0.28	J	0.1	J	0.14	J	0.1	J	0.33
Dibenzofuran	mg/kg	0.067	J	0.054	J	0.075	J	0.068	J	0.056	J	0.087	J		U		U		U	---
Dimethylphthalate	mg/kg		U		U		U		U		U		U		U		U		U	---
Di-n-butylphthalate	mg/kg	0.12	J	0.27	J	0.22	J	0.14	J	0.086	J	0.11	J	0.098	J	0.12	J	0.12	J	---
Fluoranthene	mg/kg	2.9		1.6		2.7		1.4		1.6		2.2		1		1.2		0.67		100
Fluorene	mg/kg	0.14	J	0.11	J	0.13	J	0.13	J	0.11	J	0.13	J	0.04	J	0.059	J		U	30
Indeno(1,2,3-cd)pyrene	mg/kg	1		0.56		0.84		0.47		0.53		1.1		0.35	J	0.48		0.35	J	0.5
Naphthalene	mg/kg	0.12	J	0.073	J	0.13	J	0.083	J	0.12	J	0.12	J		U		U		U	12
Pentachlorophenol	mg/kg		U		U		U		U		U		U		U		U		U	0.8
Phenanthrene	mg/kg	1.3		0.73		1.2		0.86		0.72		0.85		0.4		0.52		0.23	J	100
Phenol	mg/kg		U		U		U		U		U		U		U		U		U	0.33
Pyrene	mg/kg	2.4		1.4		2.2		1.2		1.3		2.1		0.96		1.2		0.64		100

TABLE 3-8 SEMIVOLATILE ORGANIC COMPOUND DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 8270	Sample Location	SS-07						SS-08						SS-09						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/12/2010						1/13/2010						1/13/2010						
	Sample Type	Composite						Composite						Composite						
2,4-Dimethylphenol	mg/kg		U			U			U			U			U			U		---
2-Methylnaphthalene	mg/kg	0.11	J		U		0.11	J	0.13	J			U	0.15	J			U		---
3,3'-Dichlorobenzidine	mg/kg		U		U			U			U		U		U			U		---
4-Chloroaniline	mg/kg		U		U			U			U		U		U			U		---
4-Methylphenol	mg/kg		U		U			U			U		U		U			U		---
Acenaphthene	mg/kg	0.093	J	0.1	J	0.12	J	0.13	J			U	0.086	J			U		U	20
Acenaphthylene	mg/kg	1.1		0.82		0.92		1		0.15	J	0.064	J	1.2		0.15	J	0.057	J	100
Anthracene	mg/kg	1.1		0.9		1.1		1.1		0.13	J	0.054	J	1.1		0.13	J	0.054	J	100
Benzo(a)anthracene	mg/kg	2.5		2.2		2.3		1.8		0.2	J	0.12	J	1.7		0.26	J	0.09	J	1
Benzo(a)pyrene	mg/kg	2.4		2.2		2.1		2.2		0.24	J	0.13	J	1.9		0.27	J	0.1	J	1
Benzo(b)fluoranthene	mg/kg	3		2.8		2.5		3.1		0.32	J	0.2	J	2.3		0.31	J	0.15	J	1
Benzo(g,h,i)perylene	mg/kg	1.5		1.6		1.3		2.1		0.21	J	0.15	J	1.9		0.21	J	0.086	J	100
Benzo(k)fluoranthene	mg/kg	1.4		1.2		1.1		1.4		0.16	J	0.069	J	1.2		0.18	J	0.051	J	0.8
Bis(2-ethylhexyl)phthalate	mg/kg		U		U		U	0.36	J		U		U	0.29	J		U		U	---
Butylbenzylphthalate	mg/kg		U		U		U	0.065	J		U		U		U		U		U	---
Carbazole	mg/kg	0.18	J	0.13	J	0.14	J	0.34	J		U		U	0.2	J		U		U	---
Chrysene	mg/kg	2.8		2.8		2.6		2.4		0.29	J	0.14	J	2		0.27	J	0.12	J	1
Dibenzo(a,h)anthracene	mg/kg	0.39	J	0.4		0.34	J	0.48	J		U		U	0.38	J	0.053	J		U	0.33
Dibenzofuran	mg/kg	0.075	J		U	0.079	J	0.1	J		U		U	0.091	J		U		U	---
Dimethylphthalate	mg/kg		U		U		U		U		U		U		U		U	0.25	J	---
Di-n-butylphthalate	mg/kg	0.1	J	0.11	J	0.15	J	0.22	J	0.11	J	0.11	J	0.081	J	0.066	J	0.068	J	---
Fluoranthene	mg/kg	4		3.5		3.8		4.2		0.49	J	0.23	J	3		0.46		0.16	J	100
Fluorene	mg/kg	0.22	J	0.26	J	0.21	J	0.23	J		U		U	0.22	J	0.041	J		U	30
Indeno(1,2,3-cd)pyrene	mg/kg	1.4		1.3		1.2		2		0.19	J	0.13	J	1.6		0.19	J	0.087	J	0.5
Naphthalene	mg/kg	0.12	J		U	0.11	J	0.12	J		U		U	0.15	J		U		U	12
Pentachlorophenol	mg/kg		U		U		U		U		U		U		U		U		U	0.8
Phenanthrene	mg/kg	1.7		2		1.7		2		0.24	J	0.11	J	1.6		0.26	J	0.082	J	100
Phenol	mg/kg	0.14	J		U		U		U		U		U		U		U		U	0.33
Pyrene	mg/kg	3.9		3.6		3.8		3.7		0.45	J	0.21	J	2.9		0.42		0.15	J	100

TABLE 3-8 SEMIVOLATILE ORGANIC COMPOUND DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 8270	Sample Location	SS-10						SS-11						SS-12						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)	
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24			
	Sample Date	1/13/2010						1/13/2010						1/13/2010							
	Sample Type	Composite						Composite						Composite							
2,4-Dimethylphenol	mg/kg		U	NR				U			U		U		U		U		U	---	
2-Methylnaphthalene	mg/kg	0.16	J	NR			NR			0.04	J			U	0.076	J	0.063	J	0.11	J	---
3,3'-Dichlorobenzidine	mg/kg		U			U			U		U			U			U		U	---	
4-Chloroaniline	mg/kg		U	NR			NR			U		U			U			U		U	---
4-Methylphenol	mg/kg		U	NR			NR			U		U			U			U		U	---
Acenaphthene	mg/kg	0.22	J	NR			NR		0.048	J		U		U	0.063	J	0.057	J	0.097	J	20
Acenaphthylene	mg/kg	2.1		NR			NR		0.45		0.16	J	0.13	J	0.64		0.57		0.33	J	100
Anthracene	mg/kg	2.3		NR			NR		0.49		0.15	J	0.12	J	0.62		0.53		0.51		100
Benzo(a)anthracene	mg/kg	2.9		NR			NR		1.4		0.34	J	0.23	J	1.1		0.89		0.9		1
Benzo(a)pyrene	mg/kg	3.6		NR			NR		1.3		0.35	J	0.26	J	1.2		0.96		0.88		1
Benzo(b)fluoranthene	mg/kg	5.5		NR			NR		1.5		0.45		0.32	J	1.5		1.2		1.2		1
Benzo(g,h,i)perylene	mg/kg	3.3		NR			NR		0.79		0.24	J	0.19	J	0.87		0.74		0.61		100
Benzo(k)fluoranthene	mg/kg	2		NR			NR		0.78		0.22	J	0.16	J	0.83		0.83		0.5		0.8
Bis(2-ethylhexyl)phthalate	mg/kg	0.75		NR			NR			U		U		U	0.2	J	0.18	J		U	---
Butylbenzylphthalate	mg/kg	0.085	J	NR			NR			U		U		U		U		U		U	---
Carbazole	mg/kg	0.58	J	NR			NR		0.082	J		U		U	0.16	J	0.15	J	0.12	J	---
Chrysene	mg/kg	4.2		NR			NR		1.3		0.4	J	0.27	J	1.4		1.2		1		1
Dibenzo(a,h)anthracene	mg/kg	0.76		NR			NR		0.2	J	0.059	J	0.048	J	0.21	J	0.18	J	0.16	J	0.33
Dibenzofuran	mg/kg	0.15	J	NR			NR			U		U		U	0.049	J		U	0.074	J	---
Dimethylphthalate	mg/kg			U	NR			NR		U		U		U		U		U		U	---
Di-n-butylphthalate	mg/kg	0.32	J	NR			NR		0.11	J	0.094	J	0.1	J	0.15	J	0.12	J	0.084	J	---
Fluoranthene	mg/kg	7.2		NR			NR		2.3		0.64		0.45		2.5		2.1		2		100
Fluorene	mg/kg	0.41	J	NR			NR		0.081	J	0.044	J		U	0.12	J	0.11	J	0.15	J	30
Indeno(1,2,3-cd)pyrene	mg/kg	3		NR			NR		0.75		0.26	J	0.2	J	0.8		0.68		0.59		0.5
Naphthalene	mg/kg	0.14	J	NR			NR			U		U		U		U		U		U	12
Pentachlorophenol	mg/kg			U	NR			NR			U			U		U		U		U	0.8
Phenanthrene	mg/kg	3.4		NR			NR		0.76		0.31	J	0.21	J	1.1		1		1.2		100
Phenol	mg/kg			U	NR			NR			U		U		U		U			U	0.33
Pyrene	mg/kg	6.4		NR			NR		2.1		0.61		0.43		2.2		1.9		1.7		100
NOTE : NR = No Recovery.																					

NOTE : NR = No Recovery.

TABLE 3-8 SEMIVOLATILE ORGANIC COMPOUND DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 8270	Sample Location	SS-13						SS-14						SS-15						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6	6-12	12-24				0-6	6-12	12-24				0-6	6-12	12-24				
	Sample Date	1/13/2010						1/13/2010						1/13/2010						
	Sample Type	Composite						Composite						Composite						
2,4-Dimethylphenol	mg/kg		U	NR		NR		U		U		U		U		U	NR		---	
2-Methylnaphthalene	mg/kg	0.23	J	NR		NR		U		U		U	0.14	J	0.076	J	NR		---	
3,3'-Dichlorobenzidine	mg/kg		U		U		U		U		U		U		U		NR	U	---	
4-Chloroaniline	mg/kg	0	U	NR		NR		U		U		U		U		U	NR		---	
4-Methylphenol	mg/kg	0	U	NR		NR		U		U		U	0.073	J		U	NR		---	
Acenaphthene	mg/kg	0.19	J	NR		NR		U		U		U	0.1	J	0.097	J	NR		20	
Acenaphthylene	mg/kg	2		NR		NR	0.078	J	0.079	J	0.076	J	1.6		0.32	J	NR		100	
Anthracene	mg/kg	2.2		NR		NR	0.063	J	0.062	J	0.074	J	2.6		0.59		NR		100	
Benzo(a)anthracene	mg/kg	2.4		NR		NR	0.15	J	0.2	J	0.21	J	7.1	D	1.3		NR		1	
Benzo(a)pyrene	mg/kg	2.9		NR		NR	0.15	J	0.2	J	0.2	J	4.5		1.3		NR		1	
Benzo(b)fluoranthene	mg/kg	4.7		NR		NR	0.21	J	0.28	J	0.26	J	5.6		1.6		NR		1	
Benzo(g,h,i)perylene	mg/kg	2.6		NR		NR	0.1	J	0.14	J	0.14	J	2.1		0.89		NR		100	
Benzo(k)fluoranthene	mg/kg	1.6		NR		NR	0.1	J	0.11	J	0.1	J	3		0.86		NR		0.8	
Bis(2-ethylhexyl)phthalate	mg/kg	0.61		NR		NR		U		U		U	0.12	J	0.15	J	NR		---	
Butylbenzylphthalate	mg/kg	0.072	J	NR		NR		U		U		U	0.11	J	0.088	J	NR		---	
Carbazole	mg/kg	0.53	J	NR		NR		U		U		U	0.38		0.16	J	NR		---	
Chrysene	mg/kg	3.5		NR		NR	0.18	J	0.21	J	0.21	J	5.9		1.3		NR		1	
Dibenzo(a,h)anthracene	mg/kg	0.63		NR		NR		U		U		U	0.79		0.22	J	NR		0.33	
Dibenzofuran	mg/kg	0.17	J	NR		NR		U		U		U	0.27	J	0.1	J	NR		---	
Dimethylphthalate	mg/kg		U	NR		NR		U		U		U		U		U	NR		---	
Di-n-butylphthalate	mg/kg	0.22	J	NR		NR	0.071	J	0.067	J	0.077	J	0.092	J	0.061	J	NR		---	
Fluoranthene	mg/kg	6.2		NR		NR	0.32	J	0.34	J	0.39	J	14	D	2.4		NR		100	
Fluorene	mg/kg	0.37	J	NR		NR		U		U		U	0.62		0.18	J	NR		30	
Indeno(1,2,3-cd)pyrene	mg/kg	2.4		NR		NR	0.1	J	0.14	J	0.14	J	2.4		0.87		NR		0.5	
Naphthalene	mg/kg	0.24	J	NR		NR		U		U		U	0.17	J	0.069	J	NR		12	
Pentachlorophenol	mg/kg		U	NR		NR		U		U		U		U		U	NR		0.8	
Phenanthrene	mg/kg	3.1		NR		NR	0.15	J	0.15	J	0.22	J	5.2		1.4		NR		100	
Phenol	mg/kg		U	NR		NR		U		U		U		U		U	NR		0.33	
Pyrene	mg/kg	5.5		NR		NR	0.28	J	0.33	J	0.36	J	9.5	D	1.9		NR		100	

TABLE 3-8 SEMIVOLATILE ORGANIC COMPOUND DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 8270	Sample Location	SS-16						SS-17						SS-18						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)	
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24			
	Sample Date	1/13/2010						1/13/2010						1/13/2010							
	Sample Type	Composite						Composite						Composite							
2,4-Dimethylphenol	mg/kg		U			U	NR			U			U			U			U	---	
2-Methylnaphthalene	mg/kg	0.16	J	0.058	J		NR		0.17	J	0.3	J		U	0.1	J	0.18	J	0.27	J	---
3,3'-Dichlorobenzidine	mg/kg		U		U			U		U		U		U		U		U		---	
4-Chloroaniline	mg/kg		U		U		NR		U	0.061	J		U		U		U		U	---	
4-Methylphenol	mg/kg		U		U		NR		U		U		U		U		U	0.066	J	---	
Acenaphthene	mg/kg	0.13	J	0.072	J		NR		0.17	J	0.17	J		U	0.14	J	0.15	J	0.22	J	20
Acenaphthylene	mg/kg	1.4		0.62			NR		1.4		1.9		0.21	J	1.1		2		2.1		100
Anthracene	mg/kg	1.5		0.69			NR		1.6		2.1		0.19	J	1.1		1.5		1.8		100
Benzo(a)anthracene	mg/kg	1.7		0.7			NR		1.9		2		0.67		1.7		2.3		3		1
Benzo(a)pyrene	mg/kg	2		0.88			NR		2.1		2.2		0.72		2		2.9		3.4		1
Benzo(b)fluoranthene	mg/kg	3.1		1.3			NR		3.2		3		0.85		2.6		3.4		4.6		1
Benzo(g,h,i)perylene	mg/kg	1.6		0.75			NR		1.5		1.7		0.56		1.9		2.6		2.9		100
Benzo(k)fluoranthene	mg/kg	1.2		0.62			NR		1.3		1.4		0.51		1.6		1.9		2.5		0.8
Bis(2-ethylhexyl)phthalate	mg/kg	0.37	J	0.17	J		NR		0.39	J	0.46	J		U	0.38	J	0.23	J	0.49	J	---
Butylbenzylphthalate	mg/kg		U		U		NR			U		U		U		U		U		---	
Carbazole	mg/kg	0.39	J	0.16	J		NR		0.38	J	0.35	J	0.085	J	0.36	J	0.38	J	0.58		---
Chrysene	mg/kg	2.3		1			NR		2.6		2.4		0.79		2.3		3.2		4.1		1
Dibenzo(a,h)anthracene	mg/kg	0.45	J	0.18	J		NR		0.39	J	0.41	J	0.13	J	0.4	J	0.51	J	0.63		0.33
Dibenzofuran	mg/kg	0.12	J	0.05	J		NR		0.12	J	0.17	J		U	0.1	J	0.12	J	0.19	J	---
Dimethylphthalate	mg/kg		U		U		NR			U		U		U		U		U		---	
Di-n-butylphthalate	mg/kg	0.13	J	0.093	J		NR		0.12	J	0.11	J	0.072	J	0.13	J	0.1	J	0.22	J	---
Fluoranthene	mg/kg	4.2		2			NR		4.7		4.2		1.3		4.6		5.2		7.6		100
Fluorene	mg/kg	0.26	J	0.12	J		NR		0.3	J	0.35	J	0.063	J	0.25	J	0.35	J	0.42	J	30
Indeno(1,2,3-cd)pyrene	mg/kg	1.5		0.71			NR		1.5		1.5		0.51		1.8		2.3		2.8		0.5
Naphthalene	mg/kg	0.17	J		U		NR		0.17	J	0.29	J		U		U	0.23	J	0.3	J	12
Pentachlorophenol	mg/kg		U		U		NR			U		U		U		U		U		0.8	
Phenanthrene	mg/kg	2.1		0.95			NR		2.4		2.3		0.68		2.3		2.4		3.6		100
Phenol	mg/kg		U		U		NR			U		U		U		U		U		0.33	
Pyrene	mg/kg	3.8		1.7			NR		4.1		3.9		1.3		3.7		4.4		5.8		100

TABLE 3-8 SEMIVOLATILE ORGANIC COMPOUND DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 8270	Sample Location	SS-19						SS-20						SS-21						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/13/2010						1/13/2010						1/13/2010						
	Sample Type	Composite						Composite						Composite						
2,4-Dimethylphenol	mg/kg		U			U		U	0.088	J		U		U		U	NR		---	
2-Methylnaphthalene	mg/kg	0.19	J		U			0.071	J	0.56		0.24	J		U	0.054	J	NR	---	
3,3'-Dichlorobenzidine	mg/kg		U		U		U		U		U		U		U		U		---	
4-Chloroaniline	mg/kg		U		U		U		U	0.13	J		U		U		U	NR	---	
4-Methylphenol	mg/kg		U		U		U		U	0.1	J	0.084	J		U		U	NR	---	
Acenaphthene	mg/kg	0.16	J		U		U	0.081	J	0.51		0.18	J	0.081	J	0.073	J	NR	20	
Acenaphthylene	mg/kg	1.2			U		U	0.58		4.3		2.4		0.46		0.5		NR	100	
Anthracene	mg/kg	1.2		0.046	J		U	0.61		4.1		1.9		0.45		0.5		NR	100	
Benzo(a)anthracene	mg/kg	1.2		0.084	J		U	1.2		4		3.3		1		0.94		NR	1	
Benzo(a)pyrene	mg/kg	1.5		0.093	J		U	1.5		4.4		3.9		0.93		1.2		NR	1	
Benzo(b)fluoranthene	mg/kg	1.8		0.14	J		U	2.2		5.7		4.9		1.1		1.6		NR	1	
Benzo(g,h,i)perylene	mg/kg	1.4		0.099	J		U	1.5		4.3		3.2		0.74		1.5		NR	100	
Benzo(k)fluoranthene	mg/kg	0.94		0.054	J		U	1.1		2.6		2.3		0.53		0.87		NR	0.8	
Bis(2-ethylhexyl)phthalate	mg/kg	0.37	J		U		U	0.24	J	0.77		0.4	J	0.17	J	0.16	J	NR	---	
Butylbenzylphthalate	mg/kg		U		U		U		U		U	0	U		U		U	NR	---	
Carbazole	mg/kg	0.3	J		U		U	0.23	J	0.91		0.5		0.092	J	0.12	J	NR	---	
Chrysene	mg/kg	1.8		0.1	J		U	1.7		5.4		4.2		1.1		1.1		NR	1	
Dibenzo(a,h)anthracene	mg/kg	0.3	J		U		U	0.32	J	0.94		0.77		0.15	J	0.29	J	NR	0.33	
Dibenzofuran	mg/kg	0.13	J		U		U	0.056	J	0.45	J	0.2	J		U	0.049	J	NR	---	
Dimethylphthalate	mg/kg		U		U		U		U		U		U		U		U	NR	---	
Di-n-butylphthalate	mg/kg	0.096	J	0.062	J		U	0.37	J	0.13	J	0.1	J	0.079	J	0.088	J	NR	---	
Fluoranthene	mg/kg	3.5		0.18	J		U	3		11	D	7.8	D	1.9		1.9		NR	100	
Fluorene	mg/kg	0.27	J		U		U	0.16	J	0.96		0.49		0.24	J	0.13	J	NR	30	
Indeno(1,2,3-cd)pyrene	mg/kg	1.2		0.1	J		U	1.5		3.6		2.8		0.63		1.3		NR	0.5	
Naphthalene	mg/kg		U		U		U		U	0.67		0.31	J		U		U	NR	12	
Pentachlorophenol	mg/kg		U		U		U		U		U		U		U		U	NR	0.8	
Phenanthrene	mg/kg	2		0.092	J		U	1.3		6.4		3.7		1.4		0.86		NR	100	
Phenol	mg/kg		U		U		U		U	0.07	J		U		U		U	NR	0.33	
Pyrene	mg/kg	2.7		0.16	J		U	2.5		9.1	D	5.8		1.8		1.5		NR	100	

TABLE 3-8 SEMIVOLATILE ORGANIC COMPOUND DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 8270	Sample Location	SS-22						SS-23						SS-24						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6	6-12	12-24	0-6	6-12	12-24	0-6	6-12	12-24	0-6	6-12	12-24							
	Sample Date	1/13/2010						1/13/2010						1/13/2010						
	Sample Type	Composite						Composite						Composite						
2,4-Dimethylphenol	mg/kg		U		0.38	J		U		U		U		U		U		---		
2-Methylnaphthalene	mg/kg	0.096	J	0.2	J	0.27	J	0.29	J	0.49	J	0.29	J	0.15	J	0.13	J	0.077	J	---
3,3'-Dichlorobenzidine	mg/kg		U		U		U		U		U		U		U		U		---	
4-Chloroaniline	mg/kg		U		U		U		U	0.29	J		U		U		U		---	
4-Methylphenol	mg/kg		U		U		U		U		U	0.14	J		U		U		---	
Acenaphthene	mg/kg	0.092	J	0.18	J	0.096	J	0.26	J	0.18	J	0.1	J	0.16	J	0.096	J		U	20
Acenaphthylene	mg/kg	0.59	J	1.7		1.5		2.8		2.5		1.8		1.4		1		0.61		100
Anthracene	mg/kg	0.61	J	1.8		1.4		2.6		2.7		1.7		1.3		0.97		0.36	J	100
Benzo(a)anthracene	mg/kg	1.2		2.9		1.1		3.5		1.7		1.6		1.8		0.64	J	0.66		1
Benzo(a)pyrene	mg/kg	1.6		4		2.4		4		2.1		2.6		2.1		0.81		0.86		1
Benzo(b)fluoranthene	mg/kg	1.8		4.3		2.7		5.5		2.6		2.6		2.5		1.1		1.3		1
Benzo(g,h,i)perylene	mg/kg	2.2		4.1		2		3.6		2.4		2.4		1.6		0.8		0.82		100
Benzo(k)fluoranthene	mg/kg	1.3		3.9		2.2		3		2.2		2.3		1.2		0.64	J	0.42	J	0.8
Bis(2-ethylhexyl)phthalate	mg/kg	0.46	J	0.7		6		0.83		0.74		5.8		0.41	J	0.28	J	0.38	J	---
Butylbenzylphthalate	mg/kg	0.17	J	0.094	J		U	0.11	J		U		U		U		U		U	---
Carbazole	mg/kg	0.23	J	0.52	J	0.23	J	0.71		0.39	J	0.23	J	0.35	J	0.15	J	0.11	J	---
Chrysene	mg/kg	1.7		3.5		2.2		4.5		2.5		2		2.3		0.86		0.91		1
Dibenzo(a,h)anthracene	mg/kg	0.29	J	0.78		0.44	J	0.79		0.5	J	0.52	J	0.38	J	0.17	J	0.19	J	0.33
Dibenzofuran	mg/kg		U	0.15	J	0.15	J	0.2	J	0.23	J	0.13	J	0.11	J	0.076	J		U	---
Dimethylphthalate	mg/kg		U		U		U		U		U		U		U		U		U	---
Di-n-butylphthalate	mg/kg	0.14	J	0.28	J	0.12	J	0.2	J	0.17	J		U	0.07	J		U		U	---
Fluoranthene	mg/kg	3.1		6.7		2		9		3.9		2.8		4.8		1.6		1.4		100
Fluorene	mg/kg	0.15	J	0.37	J	0.13	J	0.51	J	0.41	J	0.16	J	0.29	J	0.17	J	0.1	J	30
Indeno(1,2,3-cd)pyrene	mg/kg	1.6		3.4		1.8		3.4		2.1		2		1.4		0.69		0.8		0.5
Naphthalene	mg/kg		U	0.19	J		U	0.27	J	0.39	J	0.27	J		U		U		U	12
Pentachlorophenol	mg/kg		U		U		U		U		U		U	0.42	J		U		U	0.8
Phenanthrene	mg/kg	1.2		2.8		1		3.8		2		1.2		2.2		0.84		0.66		100
Phenol	mg/kg		U		U		U		U		U		U		U		U		U	0.33
Pyrene	mg/kg	2.2		5.1		2.1		6.7		3.2		2.7		3.7		1.3		1.3		100

TABLE 3-8 SEMIVOLATILE ORGANIC COMPOUND DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 8270	Sample Location	SS-25						SS-26						SS-27						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	4/26/2010						4/26/2010						4/26/2010						
	Sample Type	Composite						Composite						Composite						
2,4-Dichlorophenol	mg/kg		U			U		U		U		U		U		U		U		---
2-Methylnaphthalene	mg/kg		U		U		U		U		U		U		U		U		U	---
3,3'-Dichlorobenzidine	mg/kg		U		U		U		U		U		U		U		U		U	---
4-Chloroaniline	mg/kg		U		U		U		U		U		U		U		U		U	---
4-Methylphenol	mg/kg		U		U		U		U		U		U		U		U		U	---
Acenaphthene	mg/kg		U	0.058	J		U		U		U		U		U		U		U	20
Acenaphthylene	mg/kg	0.19	J	0.73		0.19	J	0.12	J	0.1	J	0.18	J		U	0.069	J		U	100
Anthracene	mg/kg	0.2	J	0.59		0.14	J	0.11	J	0.076	J	0.12	J		U	0.056	J		U	100
Benzo(a)anthracene	mg/kg	0.36	J	1		0.28	J	0.23	J	0.17	J	0.29	J	0.11	J	0.18	J	0.07	J	1
Benzo(a)pyrene	mg/kg	0.32	J	0.91		0.23	J	0.21	J	0.13	J	0.25	J	0.081	J	0.13	J	0.058	J	1
Benzo(b)fluoranthene	mg/kg	0.45		1.3		0.3	J	0.28	J	0.19	J	0.35	J	0.12	J	0.19	J	0.068	J	1
Benzo(g,h,i)perylene	mg/kg	0.25	J	0.62		0.17	J	0.16	J	0.12	J	0.19	J	0.069	J	0.12	J	0.047	J	100
Benzo(k)fluoranthene	mg/kg	0.21	J	0.51		0.15	J	0.095	J	0.057	J	0.13	J	0.052	J	0.072	J		U	0.8
Bis(2-ethylhexyl)phthalate	mg/kg		U	0.23	J		U		U		U		U		U	1.2			U	---
Butylbenzylphthalate	mg/kg		U		U		U		U		U		U		U		U		U	---
Carbazole	mg/kg	0.057	J	0.11	J		U		U		U		U		U		U		U	---
Chrysene	mg/kg	0.5		1.3		0.34	J	0.33	J	0.21	J	0.32	J	0.12	J	0.2	J	0.073	J	1
Dibenzo(a,h)anthracene	mg/kg	0.078	J	0.18	J	0.059	J		U		U	0.046	J		U		U		U	0.33
Dibenzofuran	mg/kg		U	0.043	J		U		U		U		U		U		U		U	---
Dimethylphthalate	mg/kg		U		U		U		U		U		U		U		U		U	---
Di-n-butylphthalate	mg/kg		U	0.22	J		U		U		U		U		U		U		U	---
Fluoranthene	mg/kg	0.72		2.1		0.48		0.42	J	0.27	J	0.46		0.16	J	0.28	J	0.1	J	100
Fluorene	mg/kg		U	0.13	J		U		U		U		U		U		U		U	30
Indeno(1,2,3-cd)pyrene	mg/kg	0.2	J	0.52		0.15	J	0.12	J	0.087	J	0.18	J	0.058	J	0.077	J		U	0.5
Naphthalene	mg/kg		U		U		U		U		U		U		U		U		U	12
Pentachlorophenol	mg/kg		U		U		U		U		U		U		U		U		U	0.8
Phenanthrene	mg/kg	0.43	J	0.86		0.3	J	0.24	J	0.15	J	0.22	J	0.085	J	0.14	J	0.046	J	100
Phenol	mg/kg		U		U		U		U		U		U		U		U		U	0.33
Pyrene	mg/kg	0.92		2.1		0.6		0.49		0.36	J	0.55		0.2	J	0.3	J	0.12	J	100

TABLE 3-8 SEMIVOLATILE ORGANIC COMPOUND DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 8270	Sample Location	SS-28						SS-29						SS-30						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)	
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24			
	Sample Date	4/26/2010						4/26/2010						4/26/2010							
	Sample Type	Composite						Composite						Composite							
2,4-Dichlorophenol	mg/kg		U			U		U		U		U		U		U		U		U	---
2-Methylnaphthalene	mg/kg		U			U		U		U		U		U		U		U		U	---
3,3'-Dichlorobenzidine	mg/kg		U			U		U		U		U		U		U		U		U	---
4-Chloroaniline	mg/kg		U			U		U		U		U		U		U		U		U	---
4-Methylphenol	mg/kg		U			U		U		U		U		U		U		U		U	---
Acenaphthene	mg/kg	0.086	J			U		U		U		U		U		U		U		U	20
Acenaphthylene	mg/kg	0.78		0.23	J	0.079	J	0.82		0.32	J	0.056	J	0.5	J	0.11	J	0.071	J		100
Anthracene	mg/kg	0.76		0.17	J	0.053	J	0.55	J	0.22	J		U	0.36	J	0.083	J		U		100
Benzo(a)anthracene	mg/kg	1.1		0.3	J	0.13	J	0.72		0.4	J	0.092	J	0.63		0.17	J	0.13	J		1
Benzo(a)pyrene	mg/kg	0.9		0.31	J	0.097	J	0.93		0.4	J	0.061	J	0.7		0.16	J	0.11	J		1
Benzo(b)fluoranthene	mg/kg	1.5		0.24	J	0.12	J	0.79		0.47	J	0.09	J	0.89		0.21	J	0.16	J		1
Benzo(g,h,i)perylene	mg/kg	0.82		0.21	J	0.081	J	0.72		0.27	J		U	0.49	J		U	0.079	J		100
Benzo(k)fluoranthene	mg/kg	0.81		0.41	J	0.15	J	0.99		0.26	J	0.058	J	0.46	J	0.11	J	0.087	J		0.8
Bis(2-ethylhexyl)phthalate	mg/kg	0.3			U		U	0.41	J	0.17	J		U	0.18	J		U		U		---
Butylbenzylphthalate	mg/kg			U			U		U		U		U		U		U		U		---
Carbazole	mg/kg	0.21	J			U		0.14	J		U		U	0.12	J		U		U		---
Chrysene	mg/kg	1.6		0.53		0.2	J	1.1		0.57		0.096	J	1		0.23	J	0.18	J		1
Dibenzo(a,h)anthracene	mg/kg	0.11	J				U	0.17	J		U		U		U		U		U		0.33
Dibenzofuran	mg/kg			U			U		U		U		U		U		U		U		---
Dimethylphthalate	mg/kg			U			U		U		U		U		U		U		U		---
Di-n-butylphthalate	mg/kg			U	0.087	J		U		0.1	J		U	0.13	J		U		U		---
Fluoranthene	mg/kg	2.8		0.56		0.25	J	1.4		0.6		0.12	J	1.4		0.27	J	0.22	J		100
Fluorene	mg/kg	0.16	J				U	0.12	J	0.056	J		U	0.088	J		U		U		30
Indeno(1,2,3-cd)pyrene	mg/kg	0.14	J	0.21	J	0.069	J	0.55	J	0.25	J		U	0.41	J		U	0.079	J		0.5
Naphthalene	mg/kg			U			U		U		U		U		U		U		U		12
Pentachlorophenol	mg/kg			U			U		U		U		U		U		U		U		0.8
Phenanthrene	mg/kg	1.3		0.31	J	0.13	J	0.74		0.35	J	0.068	J	0.71		0.16	J	0.12	J		100
Phenol	mg/kg			U			U		U		U		U		U	0.96			U		0.33
Pyrene	mg/kg	2.9		0.75		0.32	J	1.7		0.95		0.15	J	1.6		0.39	J	0.27	J		100

TABLE 3-8 SEMIVOLATILE ORGANIC COMPOUND DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 8270	Sample Location	SS-31						SS-DUP SS-06	SS-DUP02 SS-12	SS-DUP03 SS-17	SS-DUP-01 SS-26	Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)					
	Sample Depth (in)	0-6	6-12	12-24				6-12	12-24	0-6	12-14						
	Sample Date	4/26/2010						1/12/2010	1/13/2010	1/13/2010	4/26/2010						
	Sample Type	Composite						Composite	Composite	Composite	Composite						
2,4-Dichlorophenol	mg/kg		U			U		U		U		---					
2-Methylnaphthalene	mg/kg	0.15	J	0.39	J	0.37	J		U	0.11	J	0.12	J	---			
3,3'-Dichlorobenzidine	mg/kg	0.15	J			U		U			U		U	---			
4-Chloroaniline	mg/kg		U			U	0.1	J		U		U		U	---		
4-Methylphenol	mg/kg		U			U		U		U		U		U	---		
Acenaphthene	mg/kg	0.75		1			1.3		U	0.11	J	0.13	J		U	20	
Acenaphthylene	mg/kg	0.8			1.6		2		0.32	J	0.25	J	1		0.13	J	100
Anthracene	mg/kg	3.2			4.4		5		0.24	J	0.45		0.93		0.1	J	100
Benzo(a)anthracene	mg/kg	8.2	D		13	D	14	D	0.77		1		1.5		0.23	J	1
Benzo(a)pyrene	mg/kg	6.2	D		11	D	12	D	0.8		1		1.8		0.17	J	1
Benzo(b)fluoranthene	mg/kg	7.4	D		12	D	12	D	1.1		1.4		2.5		0.22	J	1
Benzo(g,h,i)perylene	mg/kg	3.7			5.9		5.7		0.59		0.7		1.5		0.13	J	100
Benzo(k)fluoranthene	mg/kg	5.2	D		5.9		5.8		0.38		0.55		1.3		0.11	J	0.8
Bis(2-ethylhexyl)phthalate	mg/kg	0.2	J		0.17	J	0.26	J		U		U	0.36	J		U	---
Butylbenzylphthalate	mg/kg	0.092	J			U		U		U		U		U		U	---
Carbazole	mg/kg	0.86			1.3		0.99		0.069	J	0.14	J	0.32	J		U	---
Chrysene	mg/kg	11	D		12	D	12	D	0.87		1.1		2.3		0.24	J	1
Dibenzo(a,h)anthracene	mg/kg	1.3			2.5		2.3		0.15	J	0.18	J	0.44	J		U	0.33
Dibenzofuran	mg/kg	0.52			0.61		0.88			U	0.096	J	0.097	J		U	---
Dimethylphthalate	mg/kg			U		U		U		U		U		U		U	---
Di-n-butylphthalate	mg/kg	0.066	J			U	0.12	J	0.11	J		U	0.078	J		U	---
Fluoranthene	mg/kg	23	D		30	D	33	D	1.3		2.2		4.4		0.34	J	100
Fluorene	mg/kg	1.1			1.7		0.11	J	0.063	J	0.19	J	0.24	J		U	30
Indeno(1,2,3-cd)pyrene	mg/kg	3.6			5.9		5.4		0.53		0.69		1.5		0.11	J	0.5
Naphthalene	mg/kg	0.2	J		0.28	J	0.17	J		U		U		U		U	12
Pentachlorophenol	mg/kg			U		U		U		U		U		U		U	0.8
Phenanthrene	mg/kg	12	D		21	D	24	D	0.59		1.4		2.2		0.17	J	100
Phenol	mg/kg			U		U		U		U		U		U		U	0.33
Pyrene	mg/kg	20	D		26	D	0.63		1.3		1.8		3.4		0.41	J	100

TABLE 3-9 METAL DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 6010 & 7471	Sample Location	SS-01						SS-02						SS-03						Part 375 Unrestricted Use So Cleanup Objective (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/12/2010						1/12/2010						1/12/2010						
	Sample Type	Composite						Composite						Composite						
Aluminum	mg/kg	6230	J	2800	J	3050	J	4830	J	5630	J	4970	J	4440	J	3810	J	3550	J	---
Antimony	mg/kg		UJ		UJ		UJ		UJ		UJ		UJ		UJ		UJ		UJ	---
Arsenic	mg/kg	6	J	3.6	J	3.8	J	5.2	J	5.4	J	5.2	J	4.4	J	4.6	J	4.4	J	13
Barium	mg/kg	56.1	J	35.3	J	55.3	J	46.5	J	60.8	J	53.7	J	47.2	J	35.7	J	34.6	J	350
Beryllium	mg/kg	0.24	BJ	0.12	BJ	0.19	BJ	0.19	BJ	0.2	J	0.19	BJ	0.16	BJ	0.12	BJ	0.13	BJ	7.2
Cadmium	mg/kg	0.12	B	0.098	B	0.044	B	0.42		0.47		0.43		0.27		0.16	B	0.19	B	2.5
Calcium	mg/kg	154000		96500		79900		90500		63200		79500		91300		163000		152000		---
Chromium	mg/kg	11.7	J	4.1	J	5.2	J	31.1	J	56.9	J	43.7	J	19.1	J	14.8	J	13.9	J	30
Cobalt	mg/kg	7	J	3.3	J	3.2	J	4.2	J	4.5	J	4.1	J	3.8	J	3.1	J	2.6	J	---
Copper	mg/kg	25.4	J	11.5	J	14.3	J	44.4	J	68.5	J	55.1	J	35.1	J	25.9	J	24.9	J	50
Iron	mg/kg	14200	J	6750	J	10200	J	11600	J	16600	J	12300	J	9420	J	7970	J	7670	J	---
Lead	mg/kg	12	J	3.8	J	4.5	J	39.4	J	51.6	J	38.9	J	33.3	J	20.7	J	18.6	J	63
Magnesium	mg/kg	18800	J	33900	J	16600	J	18800	J	9760	J	14200	J	9920	J	8680	J	16400	J	---
Manganese	mg/kg	419	J	299	J	542	J	478	J	268	J	285	J	296	J	217	J	205	J	1,600
Mercury	mg/kg	0.014	B	0.0057	B		U	0.12		0.13		0.12		0.038	B	0.064		0.052		0.18
Nickel	mg/kg	20.1	J	8.9	J	10.8	J	19.4	J	26.9	J	23.1	J	13.3	J	11.8	J	10.4	J	30
Potassium	mg/kg	822	J	336	J	418	J	518	J	632	J	679	J	699	J	554	J	458	J	---
Selenium	mg/kg		U		U		U		U		U		U		U		U		U	3.9
Silver	mg/kg		U		U		U	0.39	B	0.65	B	0.26	B		U	0.15	B	0.14	B	2
Sodium	mg/kg	103	J	61.8	J	45.2	J	82.4	J	59.2	J	65.7	J	60.4	J	81.2	J	79.9	J	---
Thallium	mg/kg	2.5		2		1.8		1.8		1.1		1.4		1.5		2.3		2.4		---
Vanadium	mg/kg	11.7	J	6.2	J	6.8	J	11	J	12	J	10.8	J	10.4	J	8.4	J	8.3	J	---
Zinc	mg/kg	40.7	J	28	J	21.2	J	53.7	J	74.5	J	66	J	48.3	J	30.2	J	24.6	J	109
NOTE: USEPA = United States Environmental Protection Agency. ppm = Parts per million. mg/kg = Milligrams per kilogram. J = Estimated Value. --- = U = Compound was analyzed for, but not detected. B = Analyte found in associated method blank, as well as sample. Bold values indicate exceedence of standard. Standards taken from Part 375 Unrestricted Soil Cleanup Objectives																				

TABLE 3-9 METAL DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 6010 & 7471	Sample Location	SS-04						SS-05						SS-06						Part 375 Unrestricted Use So Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/12/2010						1/12/2010						1/12/2010						
	Sample Type	Composite						Composite						Composite						
Aluminum	mg/kg	4400	J	6390	J	6430	J	4470	J	4490	J	7210		6560	J	5220	J	6080	J	---
Antimony	mg/kg		UJ		UJ		UJ		UJ		UJ		U		UJ		UJ		UJ	---
Arsenic	mg/kg	5.3		5.7		6.8		5.8		5.2		5.4		4.1		6.6		4.8		13
Barium	mg/kg	34.4	J	54.4	J	61.3	J	43.8	J	33.4	U	48.4		45.2	J	49.4	J	48.6	J	350
Beryllium	mg/kg	0.16	BJ	0.22	J	0.26	J	0.16	BJ	0.17	BJ	0.22		0.23	J	0.2	BJ	0.2	BJ	7
Cadmium	mg/kg	0.26	B	0.33		0.61		0.46		0.18	B	0.23		0.18	B	0.36		0.15	B	3
Calcium	mg/kg	114000		51600		49000		117000		101000		64800		44700		64600		26300		---
Chromium	mg/kg	18.5	J	26.7	J	56	J	13.4	J	11.2	J	18.2		9.7	J	9.5	J	8.8	J	30
Cobalt	mg/kg	3.9	J	5.1	J	6.2	J	4.6	J	3.9	J	5.7		5.8	J	5.8	J	5	J	---
Copper	mg/kg	30.8	J	42.9	J	74.5	J	1240	J	38.9	J	51.1		27.5	J	37.6	J	27.6	J	50
Iron	mg/kg	9570	J	16100	J	21500	J	11200	J	9720	J	21200		17600	J	17700	J	16100	J	---
Lead	mg/kg	32.9	J	41.3	J	60.5	J	43.6	J	20.2	J	33.5		18.3	J	56.1	J	21	J	63
Magnesium	mg/kg	13200	J	11500	J	11900	J	15900	J	13100	J	16400		15300	J	12000	J	5780	J	---
Manganese	mg/kg	284	J	267	J	268	J	267	J	255	J	325		357	J	394	J	379	J	1,600
Mercury	mg/kg	0.1		0.14		0.17		0.096		0.074		0.12		0.058		0.043		0.046		0.18
Nickel	mg/kg	14	J	18.1	J	30.2	J	12.3	J	12.1	J	16.3		12.6	J	13.2	J	11.3	J	30
Potassium	mg/kg	662	J	751	J	743	J	856	J	697	J	664		924	J	814	J	619	J	---
Selenium	mg/kg		U		U		U		U		U		U		U		U	0.83	B	4
Silver	mg/kg	0.21	B	0.38	B	0.73	B		U	0.2	B	0.11			U		U		U	2
Sodium	mg/kg	58.4	J	47.6	J	52	J	79.2	J	60.7	J	77.5		65.8	J	82.5	J	92.8	J	---
Thallium	mg/kg	1.8		0.91		0.97		1.9		1.9		0.8		0.98		1.4		0.67	B	---
Vanadium	mg/kg	11.6	J	12.7	J	13.6	J	10	J	9.1	J	14.1		12	J	11.7	J	12.8	J	---
Zinc	mg/kg	48.2	J	59	J	97.2	J	61.6	J	31	J	60.1		31.6	J	60.2	J	35.5	J	109

TABLE 3-9 METAL DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 6010 & 7471	Sample Location	SS-07						SS-08						SS-09						Part 375 Unrestricted Use So Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/12/2010						1/13/2010						1/13/2010						
	Sample Type	Composite						Composite						Composite						
Aluminum	mg/kg	4210	J	6620	J	9070	J	9500	J	7600	J	9240	J	6090	J	7370	J	6500	J	---
Antimony	mg/kg		UJ		UJ		UJ		UJ		UJ		UJ		UJ		UJ		UJ	---
Arsenic	mg/kg	5.3		4.1		5		14.8	J	11	J	6.8	J	6.3	J	3.8	J	5.5	J	13
Barium	mg/kg	44.1	J	105	J	44.9	J	264	J	117	J	101	J	78.6	J	46.9	J	40.2	J	350
Beryllium	mg/kg	0.18	BJ	0.23	J	0.31	J	0.52	J	0.3	BJ	0.47	J	0.29	J	0.24	J	0.17	BJ	7
Cadmium	mg/kg	0.67		0.46		0.45		3.2	J	1.1	J	0.47	J	2.3	J	0.42	J	0.94	J	3
Calcium	mg/kg	120000		58200		39500		34600	J	5340	J	4570	J	43100	J	43600	J	23200	J	---
Chromium	mg/kg	29.3	J	24.6	J	24.2	J	1110	J	476	J	26	J	419	J	41.3	J	156	J	30
Cobalt	mg/kg	3.7	J	4.3	J	13.7	J	8.1	J	5.2	J	6.4	J	5.5	J	9.9	J	6.6	J	---
Copper	mg/kg	46.2	J	49.7	J	108	J	403	J	246	J	121	J	495	J	85.7	J	847	J	50
Iron	mg/kg	8540	J	9950	J	23200	J	25200	J	18000	J	15200	J	13800	J	12500	J	27500	J	---
Lead	mg/kg	52.8	J	49.6	J	45.3	J	301	J	83.6	J	32.5	J	116	J	17.3	J	22.6	J	63
Magnesium	mg/kg	7900	J	12400	J	17200	J	10900	J	3190	J	3660	J	11600	J	21100	J	9240	J	---
Manganese	mg/kg	215	J	181	J	445	J	368	J	405	J	117	J	409	J	316	J	414	J	1,600
Mercury	mg/kg	0.15		0.13		0.17		0.51	J	0.19	J	0.6	J	0.25	J	0.092	J	0.066	J	0.18
Nickel	mg/kg	16.7	J	14.6	J	22.5	J	352	J	114	J	22.9	J	107	J	27.9	J	97.8	J	30
Potassium	mg/kg	610	J	617	J	1250	J	896	J	562	J	622	J	775	J	1180	J	740	J	---
Selenium	mg/kg		U		U		U		UJ	1.2	J	1.3	J		UJ		UJ		UJ	4
Silver	mg/kg	0.69	B	0.59	B		U	3.6		1.1		5.4		3			U		U	2
Sodium	mg/kg	91	J	136	J	512	J	322	J	380	J	534	J	76.8	J	70.4	J	68.9	J	---
Thallium	mg/kg	1.8		1.2		1.2		0.81	BJ	0.62	J		UJ	0.64	BJ	1.1	J	0.45	BJ	---
Vanadium	mg/kg	14.1	J	15.1	J	16.6	J	41.7	J	23.4	J	20.2	J	14.3	J	11.4	J	15.6	J	---
Zinc	mg/kg	61.8	J	60.3	J	71.5	J	375	J	118	J	114	J	321	J	77.3	J	2100	J	109

TABLE 3-9 METAL DETECTIONS IN SURFACE SOIL

Metal Parameter List USEPA Method 6010 & 7471	Sample Location	SS-10						SS-11						SS-12						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/13/2010						1/13/2010						1/13/2010						
	Sample Type	Composite						Composite						Composite						
Aluminum	mg/kg	9890	J	NR		NR		5280	J	5410	J	5800	J	8290	J	2160	J	5660	J	---
Antimony	mg/kg		UJ	NR		NR			UJ		UJ		UJ		UJ		UJ		UJ	---
Arsenic	mg/kg	17.9	J	NR		NR		5.6	J	5.2	J	7.9	J	9.5	J	7.9	J	6	J	13
Barium	mg/kg	215	J	NR		NR		64	J	71.4	J	49.5	J	142	J	30.1	J	63.2	J	350
Beryllium	mg/kg	0.65	J	NR		NR		0.2	BJ	0.24	BJ	0.18	J	0.37	J	0.13	J	0.23	J	7
Cadmium	mg/kg	9.1	J	NR		NR		1.3	J	0.42	J	0.57	J	3.5	J	0.66	J	0.9	J	3
Calcium	mg/kg	39500	J	NR		NR		83700	J	10400	J	36400	J	22700	J	277000	J	20500	J	---
Chromium	mg/kg	1770	J	NR		NR		32.5	J	19.7	J	19.8	J	416	J	57.1	J	115	J	30
Cobalt	mg/kg	9.5	J	NR		NR		3.8	J	4.9	J	6.1	J	7.6	J	1.9	J	5.2	J	---
Copper	mg/kg	640	J	NR		NR		91.5	J	37.2	J	37.8	J	217	J	39.1	J	92.5	J	50
Iron	mg/kg	19700	J	NR		NR		10700	J	14100	J	34300	J	17200	J	6170	J	11800	J	---
Lead	mg/kg	365	J	NR		NR		67.1	J	27	J	22	J	243	J	43.9	J	81	J	63
Magnesium	mg/kg	12200	J	NR		NR		36400	J	4440	J	11300	J	7760	J	2900	J	6450	J	---
Manganese	mg/kg	534	J	NR		NR		176	J	186	J	301	J	301	J	257	J	251	J	1,600
Mercury	mg/kg	0.62	J	NR		NR		0.33	J	0.19	J	0.087	J	0.42	J	0.17	J	0.21	J	0.18
Nickel	mg/kg	630	J	NR		NR		15.6	J	13.6	J	15.2	J	161	J	27.4	J	47.3	J	30
Potassium	mg/kg	1030	J	NR		NR		561	J	501	J	570	J	1020	J	321	J	602	J	---
Selenium	mg/kg		UJ	NR		NR			UJ		UJ		UJ		UJ		UJ		UJ	4
Silver	mg/kg	4.7		NR		NR		2.2		0.29			J	1.9		0.13		1.4		2
Sodium	mg/kg	986	J	NR		NR		69.8	J	45.2	J	53	J	79.4	J	96.2	J	54.4	J	---
Thallium	mg/kg	1.1	BJ	NR		NR		1.1	J		UJ		UJ	0.53	BJ	3.5	J	0.28	BJ	---
Vanadium	mg/kg	33.1	J	NR		NR		11.4	J	14.5	J	19.9	J	21.4	J	4.8	J	12.8	J	---
Zinc	mg/kg	596	J	NR		NR		132	J	54.3	J	40.1	J	409	J	54.5	J	109	J	109

NOTE: NR = No Recovery.

NOTE: NR = No Recovery.

TABLE 3-9 METAL DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 6010 & 7471	Sample Location	SS-13						SS-14						SS-15						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/13/2010						1/13/2010						1/13/2010						
	Sample Type	Composite						Composite						Composite						
Aluminum	mg/kg	9410	J	NR		NR		5270	J	5490	J	7500	J	4210	J	3300		NR		---
Antimony	mg/kg		UJ	NR		NR			UJ		UJ	0.19	J	0.2	BJ		U	NR		---
Arsenic	mg/kg	16.5	J	NR		NR		5.4	J	7.8	J	12.1	J	6.3	J	5.5		NR		13
Barium	mg/kg	203	J	NR		NR		37.4	J	45.2	J	47.5	J	38.1	J	40.9		NR		350
Beryllium	mg/kg	0.62	J	NR		NR		0.18	J	0.19	BJ	0.23	J	0.16	BJ	0.16	B	NR		7
Cadmium	mg/kg	4.8	J	NR		NR		0.23	J	0.19	BJ	0.23	J	0.58	J	0.56		NR		3
Calcium	mg/kg	36600	J	NR		NR		42400	J	37100	J	13200	J	170000	J	153000		NR		---
Chromium	mg/kg	1570	J	NR		NR		10.1	J	8.1	J	10.9	J	8.8	J	12.8		NR		30
Cobalt	mg/kg	8.8	J	NR		NR		4.6	J	5.4	J	6.6	J	3.9	J	3.3		NR		---
Copper	mg/kg	546	J	NR		NR		27.6	J	23.9	J	25.2	J	114	J	49.6		NR		50
Iron	mg/kg	18300	J	NR		NR		11900	J	13000	J	19800	J	9820	J	10800		NR		---
Lead	mg/kg	358	J	NR		NR		32.3	J	18.8	J	17.1	J	85.3	J	94.5		NR		63
Magnesium	mg/kg	11700	J	NR		NR		8550	J	11600	J	6040	J	13300	J	43600		NR		---
Manganese	mg/kg	376	J	NR		NR		345	J	514	J	296	J	269	J	387		NR		1,600
Mercury	mg/kg	0.87	J	NR		NR		0.074	J	0.069	J	0.081	J	0.14	J	0.063		NR		0.18
Nickel	mg/kg	512	J	NR		NR		11.4	J	11	J	12.9	J	10.9	J	8.6		NR		30
Potassium	mg/kg	1130	J	NR		NR		823	J	768	J	700	J	706	J	477		NR		---
Selenium	mg/kg		UJ	NR		NR			UJ		UJ		UJ		UJ		U	NR		4
Silver	mg/kg	4.9		NR		NR			U		U		U		U		U	NR		2
Sodium	mg/kg	302	J	NR		NR		67.2	J	60	J	211	J	114	J	132		NR		---
Thallium	mg/kg	0.91	J	NR		NR		0.83	J	0.98	BJ	0.26	J	2.4	J	2.8		NR		---
Vanadium	mg/kg	29.9	J	NR		NR		12.4	J	11.9	J	16	J	8.9	J	9.9		NR		---
Zinc	mg/kg	514	J	NR		NR		40.3	J	33.6	J	42.1	J	185	J	79.5	J	NR		109

TABLE 3-9 METAL DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 6010 & 7471	Sample Location	SS-16						SS-17						SS-18						Part 375 Unrestricted Use So Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/13/2010						1/13/2010						1/13/2010						
	Sample Type	Composite						Composite						Composite						
Aluminum	mg/kg	11700		9050	J	NR		11000	J	13600	J	7540	*E	11600	J	9250	J	9500	J	---
Antimony	mg/kg		U		UR	NR			UR		UR		UR		UR		UR		UR	---
Arsenic	mg/kg	17.7		12.5	N*E	NR		21.5	J	17.4	J	15	J	21.2	J	13.7	J	16.6	J	13
Barium	mg/kg	221		160	J	NR		251	J	157	J	88.7	J	198	J	119	J	185	J	350
Beryllium	mg/kg	0.71		0.58	J	NR		0.85	J	0.71	J	0.36	J	0.82	J	0.57	J	0.66	J	7
Cadmium	mg/kg	7.9		4.4	J	NR		12.8	J	27.2	J	0.54	J	9.9	J	3.9	J	4.5	J	3
Calcium	mg/kg	34200		69600	J	NR		57600	J	29000	J	13900	J	41700	J	21300	J	35300	J	---
Chromium	mg/kg	2260		1160		NR		2990		1980		31.8		2680		916		1630		30
Cobalt	mg/kg	9.4		7.6	J	NR		10.1	J	9.7	J	6	J	9.8	J	8.1	J	8.4	J	---
Copper	mg/kg	1140		621	J	NR		778	J	1320	J	294	J	1170	J	919	J	490	J	50
Iron	mg/kg	26100		17100	J	NR		31700	J	38500	J	17100	J	31600	J	25500	J	25600	J	---
Lead	mg/kg	351		267	J	NR		363	J	270	J	72.2	J	325	J	185	J	270	J	63
Magnesium	mg/kg	14500		20800	J	NR		13400	J	14200	J	7500	J	13000	J	9540	J	10300	J	---
Manganese	mg/kg	305		319	J	NR		331	J	297	J	177	J	276	J	218	J	351	J	1,600
Mercury	mg/kg	0.6		0.25		NR		0.71		0.65		0.66		0.77		0.79		0.76		0.18
Nickel	mg/kg	587		352	J	NR		721	J	890	J	35.4	J	757	J	373	J	441	J	30
Potassium	mg/kg	1600		1440	J	NR		1330	J	1640	J	684	J	1440	J	941	J	1060	J	---
Selenium	mg/kg	2	B	1.1	BJ	NR		1.2	J		UJ		UJ		UJ		UJ		UJ	4
Silver	mg/kg	4.8		2.9	J	NR		6	J	6.2	J	22.1	J	4.9	J	7.6	J	9.2	J	2
Sodium	mg/kg	141		139		NR		144		135		249		124		153		189		---
Thallium	mg/kg	1.4		1.9	J	NR		1.7	J	1.3	J	0.58	BJ	1.7	J	0.89	J	1.2	J	---
Vanadium	mg/kg	35.5		33.8	J	NR		38.9	J	35.6	J	16	J	35.7	J	22.8	J	29.1	J	---
Zinc	mg/kg	571	J	385	J	NR		610	J	709	J	313	J	626	J	358	J	409	J	109
NOTE: E = Compound response exceeded the response of the highest standard of the initial calibration range of the instrument for that specific evidence. R = N = Presumptive evidence of a compound.																				

TABLE 3-9 METAL DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 6010 & 7471	Sample Location	SS-19						SS-20						SS-21						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/13/2010						1/13/2010						1/13/2010						
	Sample Type	Composite						Composite						Composite						
Aluminum	mg/kg	12700	J	11700	J	19200	J	8450	J	11700	J	13300	J	5100	J	4030	J	NR	---	
Antimony	mg/kg		UR		UR		UR		UR		UR	0.43	BR		UR		UR	NR	---	
Arsenic	mg/kg	10.1	J	4.7	J	4.4	J	7.8	J	20.3	J	11.6	J	5.8	J	6	J	NR	13	
Barium	mg/kg	122	J	89.9	J	251	J	117	J	207	J	165	J	58.7	J	67	J	NR	350	
Beryllium	mg/kg	0.6	J	0.43	J	0.65	J	0.38	J	0.81	J	0.64	J	0.23	J	0.22	J	NR	7	
Cadmium	mg/kg	5	J	0.63	J		UJ	2.2	J	35.8	J	5.4	J	0.83	J	1.3	J	NR	3	
Calcium	mg/kg	22000	J	4280	J	3110	J	40000	J	32900	J	14900	J	113000	J	68600	J	NR	---	
Chromium	mg/kg	1110		56.3		24.7		490		3250		161		40		241		NR	30	
Cobalt	mg/kg	9.2	J	6	J	8.8	J	6.7	J	7.7	J	9.1	J	4.6	J	3.4	J	NR	---	
Copper	mg/kg	620	J	35.5	J	7.2	J	191	J	1280	J	349	J	56.8	J	99.5	J	NR	50	
Iron	mg/kg	27900	J	19700	J	28500	J	22600	J	29900	J	28500	J	13100	J	9250	J	NR	---	
Lead	mg/kg	159	J	23.1	J	9.4	J	131	J	283	J	218	J	94.8	J	220	J	NR	63	
Magnesium	mg/kg	11900	J	3190	J	4200	J	15000	J	13500	J	8380	J	10100	J	6720	J	NR	---	
Manganese	mg/kg	419	J	198	J	169	J	369	J	232	J	312	J	270	J	171	J	NR	1,600	
Mercury	mg/kg	0.35		0.079		0.048		0.29		0.41		0.5		0.088		0.24		NR	0.18	
Nickel	mg/kg	357	J	41.3	J	22	J	153	J	766	J	200	J	24.6	J	67.9	J	NR	30	
Potassium	mg/kg	1580	J	597	J	896	J	1310	J	1460	J	994	J	756	J	604	J	NR	---	
Selenium	mg/kg	1.5	BJ		UJ		UJ		UJ		UJ	0.85	J		UJ		UJ	NR	4	
Silver	mg/kg	2.1	J		UJ		UJ	1.6	J	9.8	J	10.6	J	0.4	J	0.43	BJ	NR	2	
Sodium	mg/kg	82.7		67.5		97.2		87.2		194		106		933		1070		NR	---	
Thallium	mg/kg	1.2	J	0.42	J	0.44	BJ	1.3	J	1.3	J	1.1	J	1.8	J	1.2	J	NR	---	
Vanadium	mg/kg	26.9	J	22.9	J	25.5	J	21.8	J	33.6	J	25.9	J	19.6	J	15.8	J	NR	---	
Zinc	mg/kg	364	J	59.7	J	36.2	J	202	J	639	J	324	J	107	J	124	J	NR	109	

TABLE 3-9 METAL DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 6010 & 7471	Sample Location	SS-22						SS-23						SS-24						Part 375 Unrestricted Use So Cleanup Objective (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/13/2010						1/13/2010						1/13/2010						
	Sample Type	Composite						Composite						Composite						
Aluminum	mg/kg	9350	J	8360	J	13500	J	15200		14200		12400		10400		12100		9740		---
Antimony	mg/kg		UR		UR		UR		U		U		UJ		UJ		UJ		UJ	---
Arsenic	mg/kg	8.8	J	20.7	J	17.5	J	14.3		13		15.5		19.6		20.9		15.2		13
Barium	mg/kg	161	J	207	J	238	J	254		343		208	J	306	J	246	J	119	J	350
Beryllium	mg/kg	0.5	J	0.67	J	0.66	J	1.1		0.78		0.77	J	0.81	J	0.81	J	0.54	J	7
Cadmium	mg/kg	6.5	J	7.3	J	7.4	J	9.3		19.5		8		8.2		17.4		3.4		3
Calcium	mg/kg	67000	J	38700	J	32300	J	44900		34400		29700		37300		46900		14100		---
Chromium	mg/kg	630		2670		1690		1980		2500		2080	J	3110	J	3320	J	525	J	30
Cobalt	mg/kg	8.9	J	8.1	J	9.2	J	14.1		12.2		9.6	J	9.6	J	9.9	J	8	J	---
Copper	mg/kg	280	J	571	J	1200	J	646		1550		1460	J	741	J	1420	J	546	J	50
Iron	mg/kg	26800	J	26100	J	36400	J	26300		32700		24000	J	21400	J	34500	J	29600	J	---
Lead	mg/kg	416	J	346	J	270	J	522		289		309	J	380	J	340	J	115	J	63
Magnesium	mg/kg	12700	J	9870	J	13400	J	16700		14000		13900	J	11900	J	13800	J	7220	J	---
Manganese	mg/kg	355	J	237	J	251	J	672		565		278	J	340	J	412	J	295	J	1,600
Mercury	mg/kg	0.47		0.6		0.79		0.72		0.75		0.61		0.87		0.87		0.97		0.18
Nickel	mg/kg	236	J	589	J	466	J	690		776		514	J	725	J	716	J	193	J	30
Potassium	mg/kg	1410	J	1010	J	1580	J	1840		1630		1510	J	1410	J	1400	J	958	J	---
Selenium	mg/kg		UJ		UJ		UJ		U	1.5	B		U	2.2		1.2	B		U	4
Silver	mg/kg	1.3	J	3.2	J	6.6	J	5.2		9.7		7.3		5.6		7.9		7		2
Sodium	mg/kg	1880		1750		2910		1950		2120		1360		327		633		551		---
Thallium	mg/kg	1.8	J	1.1	J	1.3	J		U		U	1.3		1.7		1.7		0.96		---
Vanadium	mg/kg	33.9	J	34	J	30.9	J	45.2		36.6		32.7		36.9		34.9		23.3		---
Zinc	mg/kg	527	J	485	J	696	J	778		844		682	J	629	J	775	J	304	J	109

TABLE 3-9 METAL DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 6010 & 7471	Sample Location	SS-25						SS-26						SS-27						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	4/26/2010						4/26/2010						4/26/2010						
	Sample Type	Composite						Composite						Composite						
Aluminum	mg/kg	10500		12100		10000		5440		4780		5630		7110		3380		5400		---
Antimony	mg/kg		U		U		U		U		U		U		U		U		U	---
Arsenic	mg/kg	11.4		2.4		5.8		4.6		4.1		4.5		6.1		3.2		9		13
Barium	mg/kg	169		244		110		54.6		61.9		50.9		52.1		38.7		44.7		350
Beryllium	mg/kg	0.48		0.32		0.41		0.23		0.2	B	0.24		0.29	B	0.13	B	0.21	B	7
Cadmium	mg/kg	6.1		0.48		1.6		1.3		1.8		0.84		1.4		1.9		0.81		3
Calcium	mg/kg	22300		5670		21000		33500		109000		84200		42900		25000		29400		---
Chromium	mg/kg	809	*	55.3	*	147	*	76.6	*	29.7	*	60.4	*	26.1	*	23.3	*	12.3	*	30
Cobalt	mg/kg	9.3		4.3		6.2		5		7.8		5.5		5.7		5.1		5		---
Copper	mg/kg	436		32.7		119		60.3		34.7		78.7		43.3		50.7		28.9		50
Iron	mg/kg	66100	*	13800	*	19700	*	15600	*	15400	*	18200	*	16800	*	67200	*	18200	*	---
Lead	mg/kg	190	E	23.6	E	109	E	55.7	E	15.1	E	35.4	E	52.4	E	33.2	E	19.6	E	63
Magnesium	mg/kg	6880	*	3500	*	8400	*	7150	*	2950	*	5490	*	19500	*	7980	*	8890	*	---
Manganese	mg/kg	459	*	113	*	294	*	274	*	853	*	286	*	370	*	403	*	318	*	1,600
Mercury	mg/kg	0.3		0.1		0.052		0.18		0.015	B	0.058		0.18		0.17		0.097		0.18
Nickel	mg/kg	345	E	26.3	E	64.4	E	35.5	E	30.3	E	31.2	E	18.8	E	15.9	E	12	E	30
Potassium	mg/kg	1210		923		908		940		1220		1260		1520		743		929		---
Selenium	mg/kg		U		U		U	0.75	B	2.4		1.7			U		U		U	4
Silver	mg/kg	2.3			U	0.68	B	0.26	B		U		U		U		U		U	2
Sodium	mg/kg	105		76.6		94.7		70.7		77.3		66.6		136		79		101		---
Thallium	mg/kg		U		U		U		U	1.1		0.27	B	0.46	B		U		U	---
Vanadium	mg/kg	23.5		18.5		20.9		12.6		10.9		12.8		15.3		7.6		12		---
Zinc	mg/kg	430	E	54.7	E	162	E	123	E	88.7	E	67.8	E	344	E	615	E	218	E	109

TABLE 3-9 METAL DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 6010 & 7471	Sample Location	SS-28						SS-29						SS-30						Part 375 Unrestricted Use So Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	4/26/2010						4/26/2010						4/26/2010						
	Sample Type	Composite						Composite						Composite						
Aluminum	mg/kg	9240		7850		5270		10300		8860		8320		10800		7880		8150		---
Antimony	mg/kg		U		U		U		U		U		U		U		U		U	---
Arsenic	mg/kg	12.7		6.8		5		11.7		9.4		9		9.4		4.6		5.9		13
Barium	mg/kg	201		93		78.4		170		100		78.4		119		57.9		58.9		350
Beryllium	mg/kg	0.63		0.34		0.23		0.6		0.45		0.35		0.59		0.34		0.32		7
Cadmium	mg/kg	6.1		1.6		0.55		4.1		1.3		0.64		3		0.74		0.3		3
Calcium	mg/kg	35900		55100		42800		29900		15900		13600		22400		9170		7090		---
Chromium	mg/kg	1280	*	265	*	45.6	*	2050	*	538	*	37	*	634	*	49.3	*	13.5	*	30
Cobalt	mg/kg	7.8		5.2		4.9		8.5		7.3		6.3		8		6.7		6.3		---
Copper	mg/kg	401		242		94.1		1080		450		85.5		341		48.5		44.1		50
Iron	mg/kg	18100	*	14300	*	14900	*	25400	*	23400	*	21800	*	24300	*	17800	*	18400	*	---
Lead	mg/kg	253	E	62.6	E	29.6	E	248	E	91.7	E	29.1	E	153	E	23	E	13.9	E	63
Magnesium	mg/kg	10300	*	11400	*	11900	*	10400	*	7190	*	6170	*	8850	*	5080	*	4720	*	---
Manganese	mg/kg	309	*	400	*	358	*	876	*	709	*	415	*	322	*	204	*	173	*	1,600
Mercury	mg/kg		U	0.43		0.69		0.5		0.28		0.89		0.31			U	1.4		0.18
Nickel	mg/kg	428	E	101	E	25	E	438	E	142	E	23.2	E	220	E	32	E	16.3	E	30
Potassium	mg/kg	1650		1940		897		1470		1090		971		1250		790		764		---
Selenium	mg/kg	1.8	B		U		U	3.4			U		U	0.97	B		U		U	4
Silver	mg/kg	4.3		2.1		4.4		3.8		2.5		4.7		2.8		0.84	B	1.5		2
Sodium	mg/kg	373		440		270		841		490		393		500		296		269		---
Thallium	mg/kg		U		U		U		U		U		U		U		U		U	---
Vanadium	mg/kg	30.1		17.3		11.8		29.9		19.6		16.5		26.7		15.7		16		---
Zinc	mg/kg	427	E	152	E	91.6	E	480	E	213	E	94.1	E	264	E	66.2	E	62.6	E	109

TABLE 3-9 METAL DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 6010 & 7471	Sample Location	SS-31						SS-DUP SS-06	SS-DUP02 12	SS	SS-DUP03 17	SS	SS-DUP-01 SS-26	Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)		
	Sample Depth (in)	0-6		6-12		12-24		6-12		12-24		0-6			12-14	
	Sample Date	4/26/2010						1/12/2010		1/13/2010		1/13/2010			4/26/2010	
	Sample Type	Composite						Composite		Composite		Composite			Composite	
Aluminum	mg/kg	2540		3980		3510		4250		5000		8530		5540	---	
Antimony	mg/kg		U		U		U		U		UJ		UJ		---	
Arsenic	mg/kg	2.8		4.4	N*	4.2	N*	4.3		5.5		15.7		4.7	13	
Barium	mg/kg	46.7		97.8	*E	50.5	*E	35		41	J	178	J	28	350	
Beryllium	mg/kg	0.12	B	0.18	B	0.18	B	0.15	B	0.2	J	0.64	J	0.27	7	
Cadmium	mg/kg	0.98		1.1		0.92		0.16		0.97		10.6		0.3	3	
Calcium	mg/kg	63800		108000	E	135000	E	76800		178000		36500		84100	---	
Chromium	mg/kg	23.5	*	33	E	43.2	E	6.9		60	J	2180	J	12.4	*	
Cobalt	mg/kg	2.6		3.5	E	2.7	E	3.6		3.6	J	7.7	J	5.1	---	
Copper	mg/kg	56.1		81.5		67.2		21		58.8	J	584	J	21.8		
Iron	mg/kg	13200	*	16600	E	14300	E	9440		9360	J	22900	J	21400	*	
Lead	mg/kg	176	E	282	N*E	353	N*E	35.1		43.7	J	258	J	5.7	E	
Magnesium	mg/kg	7770	*	14200	E	21900	E	11800		7870	J	9620	J	2950	*	
Manganese	mg/kg	209	*	279	E	251	E	283		237	J	248	J	259	*	
Mercury	mg/kg	0.28		0.25		0.21		0.05		0.28		0.81		0.1		
Nickel	mg/kg	12.4	E	16.7	E	17.2	E	8.6		26	J	592	J	15.1	E	
Potassium	mg/kg	462		633	*	491	*	645		877	J	1080	J	1270		
Selenium	mg/kg	0.89	B	1.2	B	2			U		U		U		U	
Silver	mg/kg		U		U		U		U	0.71	B	4.9			U	
Sodium	mg/kg	74.8		140		164		92.4		119		103		63.1	---	
Thallium	mg/kg		U	0.66	B	1.1		1.4		2.4		1.3		0.48	B	
Vanadium	mg/kg	12.6		16.5		12.1		9.1		10.1		28.8		14.5	---	
Zinc	mg/kg	163	E	239	NE	155	NE	31.7		59.4	J	487	J	25.9	E	
															109	

TABLE 3-10 POLYCHLORINATED BIPEHNYL DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 8082	Sample Location	SS-01						SS-02						SS-03						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)					
	Sample Depth (in)	0-6	6-12		12-24		0-6	6-12		12-24		0-6	6-12		12-24										
	Sample Date	1/12/2010						1/12/2010						1/12/2010											
	Sample Type	Composite						Composite						Composite											
Aroclor-1248	mg/kg	0.047			U		U	1.5			3.1			2.7		0.35			0.45			0.84		NA	
Aroclor-1254	mg/kg		U		U		U	0.77			1.5			1.3		0.22			0.26			0.45		NA	
Aroclor-1260	mg/kg		U		U		U		U		U			U		U			U				U	NA	
Total Aroclor	mg/kg	0.047			0		0		2.27			4.6			4		0.57			0.71			1.29		0.1
Parameter List USEPA Method 8082	Sample Location	SS-04						SS-05						SS-06						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)					
	Sample Depth (in)	0-6	6-12		12-24		0-6	6-12		12-24		0-6	6-12		12-24										
	Sample Date	1/12/2010						1/12/2010						1/12/2010											
	Sample Type	Composite						Composite						Composite											
Aroclor-1248	mg/kg	0.79			1.2		5.8		0.4		0.49	J		1	J	0.1				U				U	NA
Aroclor-1254	mg/kg	0.46			0.6		2.9		0.27		0.33			0.6		0.079				U				U	NA
Aroclor-1260	mg/kg		U			U		U		U		U			U		U			U				U	NA
Total Aroclor	mg/kg	1.25			1.8		8.7		0.67		0.82			1.6		0.179			0			0			0.1
Parameter List USEPA Method 8082	Sample Location	SS-07						SS-08						SS-09						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)					
	Sample Depth (in)	0-6	6-12		12-24		0-6	6-12		12-24		0-6	6-12		12-24										
	Sample Date	1/12/2010						1/13/2010						1/13/2010											
	Sample Type	Composite						Composite						Composite											
Aroclor-1248	mg/kg	2.5			1		0.99	D	100			15			1.7	J	15			1.6			11		NA
Aroclor-1254	mg/kg	1.5			0.72		0.52		48			8			0.83		5.6			0.64			3.5		NA
Aroclor-1260	mg/kg		U			U		U		U		U			U			U			U			U	NA
Total Aroclor	mg/kg	4			1.72		1.51		148			23			2.53		20.6			2.24			14.5		0.1
NOTE: USEPA = United States Environmental Protection Agency. ppm = Parts per million. mg/kg = Milligrams per kilogram. U = Compound was analyzed for, but not detected. NA = J = Estimated Value. D = Secondary dilution factor. Bold values indicate exceedence of standard. Standards taken from Part 375 Unrestricted Soil Cleanup Objectives.																									

TABLE 3-10 POLYCHLORINATED BIPEHNYL DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 8082	Sample Location	SS-10						SS-11						SS-12						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)									
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24											
	Sample Date	1/13/2010						1/13/2010						1/13/2010															
	Sample Type	Composite						Composite						Composite															
Aroclor-1248	mg/kg	140			NA			1			0.69			0.69			34			19			11			NA			
Aroclor-1254	mg/kg	57			NA			0.55			0.36			0.36			14			8.3			4.4			NA			
Aroclor-1260	mg/kg		U			U		U			U			U			U			U			U			NA			
Total Aroclor	mg/kg	197			0			0			1.55			1.05			48			27.3			15.4			0.1			
Parameter List USEPA Method 8082	Sample Location	SS-13						SS-14						SS-15						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)									
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24											
	Sample Date	1/13/2010						1/13/2010						1/13/2010															
	Sample Type	Composite						Composite						Composite															
Aroclor-1248	mg/kg	190			NA			0.16	J		0.042	J			U	0.099	J		0.068	J			NR			NA			
Aroclor-1254	mg/kg	76			NA			0.092				U		0.083		U	0.052	J		0.044	J			NR		NA			
Aroclor-1260	mg/kg		U			U		U			U			U		U		U			U			NR		NA			
Total Aroclor	mg/kg	266			0			0			0.252			0.042			0.151			0.112						0.1			
Parameter List USEPA Method 8082	Sample Location	SS-16						SS-17						SS-18						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)									
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24											
	Sample Date	1/13/2010						1/13/2010						1/13/2010															
	Sample Type	Composite						Composite						Composite															
Aroclor-1248	mg/kg	180	J		210			NR			70			99			0.74			94	D			49			41		NA
Aroclor-1254	mg/kg	83				U		NR			U			U			U			U			U			U	NA		
Aroclor-1260	mg/kg		U			U			U		U			U			U			U			U			U	NA		
Total Aroclor	mg/kg	263			210						70			99			0.74			94				49			41		0.1
NOTE: NR = No Recovery.																													

NOTE: NR = No Recovery.

TABLE 3-10 POLYCHLORINATED BIPEHNYL DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 8082	Sample Location	SS-19						SS-20						SS-21						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/13/2010						1/13/2010						1/13/2010						
	Sample Type	Composite						Composite						Composite						
Aroclor-1248	mg/kg	34		3.1		0.17		39		100		24		0.6		3.7	J	NR		NA
Aroclor-1254	mg/kg		U		U		U		U		U		U		U		U	NR		NA
Aroclor-1260	mg/kg		U		U		U		U		U		U		U		U		U	NA
Total Aroclor	mg/kg	34		3.1		0.17		39		100		24		0.6		3.7		0		0.1
Parameter List USEPA Method 8082	Sample Location	SS-22						SS-23						SS-24						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/13/2010						1/13/2010						1/13/2010						
	Sample Type	Composite						Composite						Composite						
Aroclor-1248	mg/kg	26		71	J	380		93		120		300		81		170		24		NA
Aroclor-1254	mg/kg		U		U		U		U		U	140		32		76		10		NA
Aroclor-1260	mg/kg		U		U		U		U		U		U		U		U		U	NA
Total Aroclor	mg/kg	26		71		380		93		120		440		113		246		34		0.1
Parameter List USEPA Method 8082	Sample Location	SS-25						SS-26						SS-27						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	4/26/2010						4/26/2010						4/26/2010						
	Sample Type	Composite						Composite						Composite						
Aroclor-1248	mg/kg	87		35		25		9.1		15		32		1.5		1.1		0.32		NA
Aroclor-1254	mg/kg	36		17		9.8		5.6		6.6		12		1.3		0.99		0.29		NA
Aroclor-1260	mg/kg		U		U		U		U		U		U		U		U		U	NA
Total Aroclor	mg/kg	123		52		34.8		14.7		21.6		44		2.8		2.09		0.61		0.1

TABLE 3-10 POLYCHLORINATED BIPEHNYL DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 8082	Sample Location	SS-28						SS-29						SS-30						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	4/26/2010						4/26/2010						4/26/2010						
	Sample Type	Composite						Composite						Composite						
Aroclor-1248	mg/kg	130		48		7		320		68		5.1		76		11		3.1		NA
Aroclor-1254	mg/kg	55		16		2.6		100		21		1.7		35		4.8		1.5		NA
Aroclor-1260	mg/kg		U		U		U		U		U		U		U		U		U	NA
Total Aroclor	mg/kg	185		64		9.6		420		89		6.8		111		15.8		4.6		0.1
Parameter List USEPA Method 8082	Sample Location	SS-31						SS-DUP SS-06		SS-DUP02 SS-12		SS-DUP03 SS-17		SS-DUP-01 SS-26			Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)			
	Sample Depth (in)	0-6		6-12		12-24		6-12		12-24		0-6		12-14						
	Sample Date	4/26/2010						1/12/2010		1/13/2010		1/13/2010		4/26/2010						
	Sample Type	Composite						Composite		Composite		Composite		Composite						
Aroclor-1248	mg/kg	0.36		0.29		1.4			U	7.9		42		27		NA				
Aroclor-1254	mg/kg								U	3.2		19		9.3		NA				
Aroclor-1260	mg/kg	0.91		0.21		0.54										NA				
Total Aroclor	mg/kg	1.27		0.5		1.94		0		11.1		61		36.3		0.1				

TABLE 3-11 PESTICIDE DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 8081	Sample Location	SS-01			SS-02			SS-03			Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)						
	Sample Depth (in)	0-6	6-12	12-24	0-6	6-12	12-24	0-6	6-12	12-24							
	Sample Date	1/12/2010			1/12/2010			1/12/2010									
	Sample Type	Composite			Composite			Composite									
4,4'-DDD	mg/kg		U	U	U		U	U	U	U	U	0.0033					
4,4'-DDE	mg/kg		U	U	U		U	U	U	U	0.004	0.0068	0.0033				
4,4'-DDT	mg/kg		U	U	U	0.024	0.041		U	0.0074	0.0096	0.012	0.0033				
Aldrin	mg/kg		U	U	U		U	U	U		U		U	0.005			
alpha-Chlordane	mg/kg		U	U	U		U	U	U		U		U	0.094			
beta-BHC	mg/kg		U	U	U		U	U	U		U	0.0033	P	U	0.036		
delta-BHC	mg/kg		U	U	U	0.04	0.11	0.14		0.0083		0.012		0.019	0.04		
Dieldrin	mg/kg		U	U	U		U	U	U		U	0.0043	J	0.006	J	0.005	
Endosulfan I	mg/kg		U	U	U		U	U	U		U		U		U	2.4	
Endosulfan II	mg/kg		U	U	U		U	U	U		U		U		U	2.4	
Endosulfan sulfate	mg/kg		U	U	U		U	U	U	0.0054	J		U	0.0041	J	2.4	
Endrin	mg/kg		U	U	U		U	U	U		U		U		U	0.014	
Endrin aldehyde	mg/kg		U	U	U		U	U	U		U		U		U	---	
Endrin ketone	mg/kg		U	U	U		U	U	U		U		U		U	---	
gamma-BHC (Lindane)	mg/kg		U	U	U		U	U	U		U		U		U	---	
gamma-Chlordane	mg/kg		U	U	U	0.016		0.042	J	U		U		U		U	---
Heptachlor	mg/kg		U	U	U		U	0.024		U		U		U		U	0.042
Heptachlor epoxide	mg/kg		U	U	U		U	U	U		U		U		U	---	
Methoxychlor	mg/kg		U	U	U		U	U	U		U		U		U	---	

Parameter List USEPA Method 8081	Sample Location	SS-04			SS-05			SS-06			Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)					
	Sample Depth (in)	0-6	6-12	12-24	0-6	6-12	12-24	0-6	6-12	12-24						
	Sample Date	1/12/2010			1/12/2010			1/12/2010								
	Sample Type	Composite			Composite			Composite								
4,4'-DDD	mg/kg		U	U	0.0077	J		U	U		U	0.0041	J		U	0.0033
4,4'-DDE	mg/kg		U	0.008	J	0.005		0.0052	J		U		U		U	0.0033
4,4'-DDT	mg/kg	0.013	0.013	0.078	0.014	0.013	0.018		U	0.0047	J		U		U	0.0033
Aldrin	mg/kg		U	U	U		U	U	U		U		U		U	0.005
alpha-Chlordane	mg/kg		U	U	U		U	U	U		U		U		U	0.094
beta-BHC	mg/kg	0.0049		0.0033	P	U	0.0023	P	0.0044		0.013		U		U	0.036
delta-BHC	mg/kg	0.017		0.03	0.27	U	0.0097		0.0061	J	0.039	J		U	U	0.04
Dieldrin	mg/kg		U	0.0068	J	U	0.0055	J	0.0058	J		U		U	U	0.005
Endosulfan I	mg/kg		U	U	U	U		U	U	U		U		U	U	2.4
Endosulfan II	mg/kg		U	U	U	U		U	U	U		U		U	U	2.4
Endosulfan sulfate	mg/kg		U	U	U	U		U	U	U		U		U	U	2.4
Endrin	mg/kg		U	U	U	U		U	U	U		U		U	U	0.014
Endrin aldehyde	mg/kg		U	U	U	U		U	U	U		U		U	U	---
Endrin ketone	mg/kg		U	U	U	U		U	U	U		U		U	U	---
gamma-BHC (Lindane)	mg/kg		U	0.0025		U	U		U	U		U		U	U	---
gamma-Chlordane	mg/kg		U	U	U	0.007		0.0083	J	U		U		U	U	---
Heptachlor	mg/kg		U	0.0056		U		0.0034	P	U		U		U	U	0.042
Heptachlor epoxide	mg/kg		U	U	U	U		U	U	U		U		U	U	---
Methoxychlor	mg/kg		U	U	U	U		U	U	U		U		U	U	---

NOTE: USEPA = United States Environmental Protection Agency.
ppm = Parts per million.
4,4'-DDD = 4,4'-Dichlorodiphenyldichloroethane
mg/kg = Milligrams per kilogram.
U = Compound was analyzed for, but not detected.
4,4'-DDE = 4,4'-Dichlorodiphenyldichloroethylene
4,4'-DDT = 4,4'-Dichlorodiphenyltrichloroethane
P =
J = Estimated value.
--- =
Bold values indicate exceedence of standard.
Standards taken from Part 375 Unrestricted Soil Cleanup Objectives.

TABLE 3-11 PESTICIDE DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 8081	Sample Location	SS-07						SS-08						SS-09						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/12/2010						1/13/2010						1/13/2010						
	Sample Type	Composite						Composite						Composite						
4,4'-DDD	mg/kg		U	0.0054	J	0.013	J	1.1	J		U		U		U		U		U	0.0033
4,4'-DDE	mg/kg	0.025	J	0.013	J	0.014	J	1.3			U		U	0.16		0.016			U	0.0033
4,4'-DDT	mg/kg	0.061		0.026		0.029		1.6			U		U	0.19		0.02			U	0.0033
Aldrin	mg/kg		U		U		U		U		U		U		U		U		U	0.005
alpha-Chlordane	mg/kg		U		U		U		U		U		U		U		U		U	0.094
beta-BHC	mg/kg		U	0.0047		0.0048			U		U		U		U		U		U	0.036
delta-BHC	mg/kg	0.025		0.006	J	0.0098		1.9	J	0.44	J	0.053	J	0.42	J	0.04	J	0.6	J	0.04
Dieldrin	mg/kg	0.017		0.0078	J	0.0081			U		U		U		0.0082	J		U	0.005	
Endosulfan I	mg/kg		U	0.0022	J	0.0026	J		U		U		U		U		U		U	2.4
Endosulfan II	mg/kg		U		U		U		U		U		U		U		U		U	2.4
Endosulfan sulfate	mg/kg	0.02	J	0.0062	J	0.01	J		U		U		U		U		U		U	2.4
Endrin	mg/kg		U		U		U		U		U		U		U		U		U	0.014
Endrin aldehyde	mg/kg		U	0.0056	J	0.01	J		U		U		U		U		U		U	---
Endrin ketone	mg/kg		U		U		U		U		U		U		U		U		U	---
gamma-BHC (Lindane)	mg/kg		U	0.0021	J		U		U		U		U		U		U		U	---
gamma-Chlordane	mg/kg		U		U	0.014		1.8	J	0.31		0.031	J	0.23	J	0.02	J	0.19	J	---
Heptachlor	mg/kg		U	0.0043		0.005		1	J	0.26		0.027		0.092	J	0.0066	J		U	0.042
Heptachlor epoxide	mg/kg		U		U		U		U		U		U		U		U		U	---
Methoxychlor	mg/kg		U		U		U		U		U		U		U		U		U	---

Parameter List USEPA Method 8081	Sample Location	SS-10						SS-11						SS-12						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/13/2010						1/13/2010						1/13/2010						
	Sample Type	Composite						Composite						Composite						
4,4'-DDD	mg/kg	1.3	J	NR		NR		0.0057	J		U		U	0.36	J	0.23	J	0.099	J	0.0033
4,4'-DDE	mg/kg	1.7		NR		NR		0.0088	J	0.0064	J	0.0068	J		U	0.24		0.12		0.0033
4,4'-DDT	mg/kg	2.1		NR		NR		0.023		0.014		0.014		0.67		0.33		0.15		0.0033
Aldrin	mg/kg		U		U		U		U		U		U		U		U		U	0.005
alpha-Chlordane	mg/kg		U		U		U		U		U		U		U		U		U	0.094
beta-BHC	mg/kg		U	NR		NR			U		U	0.0024	J		U		U		U	0.036
delta-BHC	mg/kg	1.4	J	NR		NR		0.011		0.0089		0.0096	J	1.3		0.56		0.25		0.04
Dieldrin	mg/kg	0.94	J	NR		NR		0.0053	J		U		U		U		U		U	0.005
Endosulfan I	mg/kg	0.38	J	NR		NR			U		U		U		U		U		U	2.4
Endosulfan II	mg/kg		U	NR		NR			U		U		U		U		U		U	2.4
Endosulfan sulfate	mg/kg		U	NR		NR		0.0062	J		U		U		U		U		U	2.4
Endrin	mg/kg		U	NR		NR			U		U		U		U		U		U	0.014
Endrin aldehyde	mg/kg		U	NR		NR			U		U		U		U		U		U	---
Endrin ketone	mg/kg		U		U		U		U		U		U		U		U		U	---
gamma-BHC (Lindane)	mg/kg		U	NR		NR			U		U		U		U		U		U	---
gamma-Chlordane	mg/kg	2.3	J	NR		NR		0.014		0.0077		0.0065	J	0.54	J	0.32	J	0.15	J	---
Heptachlor	mg/kg	1.3		NR		NR		0.0025	J	0.0023	J	0.0035	J		U	0.11	J		U	0.042
Heptachlor epoxide	mg/kg		U	NR		NR			U		U		U		U		U		U	---
Methoxychlor	mg/kg		U		U		U		U		U		U		U		U		U	---

NOTE: NR = No Recovery.

TABLE 3-11 PESTICIDE DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 8081	Sample Location	SS-13						SS-14						SS-15						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/13/2010						1/13/2010						1/13/2010						
	Sample Type	Composite						Composite						Composite						
4,4'-DDD	mg/kg	1.7	J	NR		NR		U		U		U		U		U	NR		U	0.0033
4,4'-DDE	mg/kg	2	J	NR		NR		U		U		U		U		U	NR		U	0.0033
4,4'-DDT	mg/kg	2.7		NR		NR		0.0051	J	U		0.0073		0.0057	J	0.0071	NR		U	0.0033
Aldrin	mg/kg		U			U		U		U		U		U		U		U	U	0.005
alpha-Chlordane	mg/kg					U		U		U		U		U		U		U	U	0.094
beta-BHC	mg/kg		U	NR		NR		U		U		U		U		U	NR		U	0.036
delta-BHC	mg/kg	6.1		NR		NR		U		U		U		U		U	NR		U	0.04
Dieldrin	mg/kg		U	NR		NR		U		U		U		U		U	NR		U	0.005
Endosulfan I	mg/kg		U	NR		NR		U		U		U		U		U	NR		U	2.4
Endosulfan II	mg/kg		U	NR		NR		U		U		U		0.0087	J		U	NR		2.4
Endosulfan sulfate	mg/kg		U	NR		NR		U		U		U		0.0061	J		U	NR		2.4
Endrin	mg/kg		U	NR		NR		U		U		U		U		U	NR		U	0.014
Endrin aldehyde	mg/kg		U	NR		NR		U		U		U		0.0045	J		U	NR		---
Endrin ketone	mg/kg		U			U		U		U		U		U		U		U	U	---
gamma-BHC (Lindane)	mg/kg		U	NR		NR		U		U		U		U		U	NR		U	---
gamma-Chlordane	mg/kg	3	J	NR		NR		U		U		U		U		U	NR		U	---
Heptachlor	mg/kg	0.85	J	NR		NR		U		U		U		U		U	NR		U	0.042
Heptachlor epoxide	mg/kg		U	NR		NR		U		U		U		U		0.003	J	U	NR	---
Methoxychlor	mg/kg		U			U		U		U		U		U		U		U	U	---

Parameter List USEPA Method 8081	Sample Location	SS-16						SS-17						SS-18						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/13/2010						1/13/2010						1/13/2010						
	Sample Type	Composite						Composite						Composite						
4,4'-DDD	mg/kg	1.7	J	1.6	J	NR		0.96	J	1.1	J		U	1.4	DJ	0.53	J	0.45	J	0.0033
4,4'-DDE	mg/kg	2.5		4		NR		1.5		1.6		0.013	J	1.6	DJ	0.6		0.7		0.0033
4,4'-DDT	mg/kg	2		2.5		NR		1.4		1.5		0.02		1.6	DJ	0.67		0.67		0.0033
Aldrin	mg/kg		U			U		U		U		U		U		U		U	U	0.005
alpha-Chlordane	mg/kg		U			U		U		U		U		U		U		U	U	0.094
beta-BHC	mg/kg		U			U	NR		U		U	0.0052	J	0.061	J		U		U	0.036
delta-BHC	mg/kg	0.93	J			U	NR		3.3		2.7		U		U	1.8		1.8		0.04
Dieldrin	mg/kg		U	1.3	J	NR		0.59	J	0.68	J	0.0056	J	0.64	J	0.31	J	0.29	J	0.005
Endosulfan I	mg/kg		U	0.77	J	NR				0.37	J		U	0.36	J	0.16	J		U	2.4
Endosulfan II	mg/kg		U		U	NR					U		U	0.083	J		U		U	2.4
Endosulfan sulfate	mg/kg		U		U	NR					U	0.0082		0.082	J		U		U	2.4
Endrin	mg/kg		U		U	NR					U		U	0.17	J		U		U	0.014
Endrin aldehyde	mg/kg		U		U	NR					U	0.0074		0.41			U		U	---
Endrin ketone	mg/kg		U		U		U				U		U		U		U		U	---
gamma-BHC (Lindane)	mg/kg		U		U	NR				U		0.0031		0.12	J		U		U	---
gamma-Chlordane	mg/kg	3.4	J	3.7		NR		1.2	P		U	0.011	J	1.4	DJ	0.62	J	0.45	J	---
Heptachlor	mg/kg	0.74	J		U	NR		0.73		0.53			U		U	0.29	J	0.35	J	0.042
Heptachlor epoxide	mg/kg		U		U	NR					U		U		U		U		U	---
Methoxychlor	mg/kg		U		U		U				U		U		U		U		U	---

TABLE 3-11 PESTICIDE DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 8081	Sample Location	SS-19						SS-20						SS-21						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/13/2010						1/13/2010						1/13/2010						
	Sample Type	Composite						Composite						Composite						
4,4'-DDD	mg/kg		U	0.034	J		U	0.22	J	1	J		U		U	0.047	J	NR		0.0033
4,4'-DDE	mg/kg	0.92		0.04			U	0.45		1.5		0.58		0.013	P	0.051		NR		0.0033
4,4'-DDT	mg/kg	1.1		0.051			U	0.42		1.3		0.72		0.021		0.06		NR		0.0033
Aldrin	mg/kg		U		U		U		U		U		U		U		U		U	0.005
alpha-Chlordane	mg/kg		U		U		U		U		U		U		U		U		U	0.094
beta-BHC	mg/kg		U		U		U		U		U		U	0.0032	J		U	NR		0.036
delta-BHC	mg/kg		U		U		U	1.6		4			U		U		U	NR		0.04
Dieldrin	mg/kg		U	0.019	J		U		U	0.58	J		U	0.0089	J	0.027	J	NR		0.005
Endosulfan I	mg/kg		U	0.0078	J		U		U		U		U	0.0023	J	0.012	J	NR		2.4
Endosulfan II	mg/kg		U		U		U		U		U		U		U		U	NR		2.4
Endosulfan sulfate	mg/kg		U		U		U		U		U		U	0.0074			U	NR		2.4
Endrin	mg/kg		U		U		U		U		U		U		U		U	NR		0.014
Endrin aldehyde	mg/kg		U	0.01			U		U		U		U	0.007		0.018	J	NR		---
Endrin ketone	mg/kg		U		U		U		U		U		U		U		U		U	---
gamma-BHC (Lindane)	mg/kg		U		U		U		U		U		U	0.0033		0.0097	J	NR		---
gamma-Chlordane	mg/kg	0.94	P	0.029	J	0.0025	J	0.35	J	1.4	J	0.79	J	0.011	J	0.042	J	NR		---
Heptachlor	mg/kg		U	0.025			U	0.25	J	1			U		U		U	NR		0.042
Heptachlor epoxide	mg/kg		U		U		U		U		U		U		U		U	NR		---
Methoxychlor	mg/kg		U		U		U		U		U		U		U		U		U	---

Parameter List USEPA Method 8081	Sample Location	SS-22						SS-23						SS-24						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)	
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24			
	Sample Date	1/13/2010						1/13/2010						1/13/2010							
	Sample Type	Composite						Composite						Composite							
4,4'-DDD	mg/kg		0.34			U	3.6	J	1.3	J	1.2	J	2.2	J		U		U		U	0.0033
4,4'-DDE	mg/kg		0.4		1.1		4.9		1.7		1.5		2.4	J		U		U		U	0.0033
4,4'-DDT	mg/kg		0.46		1.3		4		1.8		1.6		3		0.92		1.4		U		0.0033
Aldrin	mg/kg			U		U		U		U		U		U		U		U		U	0.005
alpha-Chlordane	mg/kg			U		U		U		U		U		U		U		U		U	0.094
beta-BHC	mg/kg			U		U		U		U		U		U		U		U		U	0.036
delta-BHC	mg/kg			U		U		U		U		U		U		U	6.1	J		U	0.04
Dieldrin	mg/kg			U	0.81	J	2	J	0.96	J	0.76	J	1.8	J		U		U		U	0.005
Endosulfan I	mg/kg	0.092	J			U	1.4	J				U	0.91	J		U		U		U	2.4
Endosulfan II	mg/kg			U		U		U		U		U		U		U		U		U	2.4
Endosulfan sulfate	mg/kg			U		U		U		U		U		U		U		U		U	2.4
Endrin	mg/kg			U		U		U		U		U		U		U		U		U	0.014
Endrin aldehyde	mg/kg			U		U		U		U		U		U		U		U		U	---
Endrin ketone	mg/kg			U		U		U		U		U		U		U		U		U	---
gamma-BHC (Lindane)	mg/kg			U		U		U		U		U		U		U		U		U	---
gamma-Chlordane	mg/kg	0.35	J	1.1	J	7.8	J	1.5		1.5	J	5.7	J	0.96	J		U	0.34	J		---
Heptachlor	mg/kg			U		U		U		1.1		2	J			1.2	J	0.15	J		0.042
Heptachlor epoxide	mg/kg			U		U		U				U				U		U		U	---
Methoxychlor	mg/kg			U		U		U				U				U		U		U	---

TABLE 3-11 PESTICIDE DETECTIONS IN SURFACE SOIL

Parameter List USEPA Method 8081	Sample Location	SS-25						SS-26						SS-27						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	4/26/2010						4/26/2010						4/26/2010						
	Sample Type	Composite						Composite						Composite						
4,4'-DDD	mg/kg	0.44	P		U		U		U		U		U	0.026			U	0.0042	P	0.0033
4,4'-DDE	mg/kg	0.41		0.33		0.24			U		U		U		U		U		U	0.0033
4,4'-DDT	mg/kg	0.67		0.41		0.26			U	0.14			U	0.037		0.024		0.0067	P	0.0033
Aldrin	mg/kg		U		U		U		U		U		U		U		U		U	0.005
alpha-Chlordane	mg/kg		U		U		U		U		U		U		U		U		U	0.094
beta-BHC	mg/kg		U		U		U		U		U		U		U	0.0075		0.0022		0.036
delta-BHC	mg/kg	1.8	D	0.83		0.62		0.22		0.3		1.3		0.017			U		U	0.04
Dieldrin	mg/kg	0.22			U		U		U		U		U		U		U		U	0.005
Endosulfan I	mg/kg	0.091	P		U		U		U		U		U		U		U		U	2.4
Endosulfan II	mg/kg		U		U		U		U		U		U		U		U		U	2.4
Endosulfan sulfate	mg/kg		U		U		U		U		U		U		U	0.0088	P		U	2.4
Endrin	mg/kg	0.073	P		U		U		U		U		U		U		U		U	0.014
Endrin aldehyde	mg/kg	0.079	P		U		U		U		U		U		U	0.0061			U	---
Endrin ketone	mg/kg		U		U		U		U		U		U		U	0.0058	P		U	---
gamma-BHC (Lindane)	mg/kg	0.031	P		U		U		U		U		U		U		U		U	---
gamma-Chlordane	mg/kg	0.054	P		U		U		U		U		U		U	0.0094		0.0026	P	---
Heptachlor	mg/kg	0.064	P	0.23		0.22			U		U		U		U		U	0.0025	P	0.042
Heptachlor epoxide	mg/kg	2	E	1.4		1		0.48		0.52		2.8		0.061		0.029		0.0075		---
Methoxychlor	mg/kg	0.15	PJ		U		U		U		U		U		U		U		U	---

Parameter List USEPA Method 8081	Sample Location	SS-28						SS-29						SS-30						Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	4/26/2010						4/26/2010						4/26/2010						
	Sample Type	Composite						Composite						Composite						
4,4'-DDD	mg/kg		U		U		U		U		U		U		U	0.053	P		U	0.0033
4,4'-DDE	mg/kg	0.66	P	0.16		U			U	0.3			U		U	0.072			U	0.0033
4,4'-DDT	mg/kg	0.96		0.22	P		U	1.8		0.37			U		U	0.11			U	0.0033
Aldrin	mg/kg		U		U		U		U		U		U		U		U		U	0.005
alpha-Chlordane	mg/kg		U		U		U		U		U		U		U		U		U	0.094
beta-BHC	mg/kg		U		U		U		U		U		U		U		U		U	0.036
delta-BHC	mg/kg	1.9		0.43		U		6		1.3		0.049		2		0.19		0.0012	PJ	0.04
Dieldrin	mg/kg		U		U		U		U		U		U		U		U		U	0.005
Endosulfan I	mg/kg		U		U		U		U		U		U		U		U		U	2.4
Endosulfan II	mg/kg		U		U		U		U		U		U		U		U		U	2.4
Endosulfan sulfate	mg/kg		U		U		U		U		U		U		U		U		U	2.4
Endrin	mg/kg		U		U		U		U		U		U		U		U		U	0.014
Endrin aldehyde	mg/kg		U		U		U		U		U		U		U		U		U	---
Endrin ketone	mg/kg		U		U		U		U		U		U		U		U		U	---
gamma-BHC (Lindane)	mg/kg		U		U		U		U		U		U		U		U		U	---
gamma-Chlordane	mg/kg		U		U		U		U		U		U		U		U		U	---
Heptachlor	mg/kg	0.52		0.12		U		1.2	P	0.24			U		U	0.052			U	0.042
Heptachlor epoxide	mg/kg	2.2	P	0.74		0.18		7.6		1.4		0.054		3.5		0.31	P	0.054	P	---
Methoxychlor	mg/kg		U		U		U		U		U		U		U		U		U	---

TABLE 3-11 PESTICIDE DETECTIONS IN SURFACE SOIL

TABLE 3-11 PESTICIDE DETECTIONS IN SURFACE SOIL															Part 375 Unrestricted Use Soil Cleanup Objectives (ppm)
Parameter List USEPA Method 8081	Sample Location	SS-31						SS-DUP SS-06	SS-DUP02 SS-12	SS-DUP03 SS-17	SS-DUP-01 SS-26				
	Sample Depth (in)	0-6		6-12		12-24		6-12	12-24	0-6	12-14				
	Sample Date	4/26/2010						1/12/2010	1/13/2010	1/13/2010	4/26/2010				
	Sample Type	Composite						Composite	Composite	Composite	Composite				
4,4'-DDD	mg/kg	0.011	P	0.021	P		U		U	0.49	P		U	0.0033	
4,4'-DDE	mg/kg		U		U	0.0053	P			0.6			U	0.0033	
4,4'-DDT	mg/kg	0.032	P	0.038		0.03		0.0052		0.092			U	0.0033	
Aldrin	mg/kg		U	0.0023	P		U						U	0.005	
alpha-Chlordane	mg/kg	0.009	P	0.017	P	0.013	P						U	0.094	
beta-BHC	mg/kg		U	0.0031	P	0.0058	P		U		U		U	0.036	
delta-BHC	mg/kg		U		U	0.0075	P		U	0.15	J	1.6	0.44	0.04	
Dieldrin	mg/kg	0.011	P	0.0066	P	0.0087	P		U		0.32	J		0.005	
Endosulfan I	mg/kg		U		U	0.0023	PJ		U		U		U	2.4	
Endosulfan II	mg/kg		U		U		U		U		U		U	2.4	
Endosulfan sulfate	mg/kg	0.018	P	0.013	P	0.022	P		U		U		U	2.4	
Endrin	mg/kg	0.0051		0.0064	P	0.005	P		U		U		U	0.014	
Endrin aldehyde	mg/kg	0.017		0.0098	P	0.013	P		U		U		U	---	
Endrin ketone	mg/kg	0.022	P	0.042		0.039	P						U	---	
gamma-BHC (Lindane)	mg/kg		U		U		U		U		U		U	---	
gamma-Chlordane	mg/kg	0.011		0.017	P	0.01	P		U	0.11	J	0.79	J	---	
Heptachlor	mg/kg		U		U		U		U		0.39		U	0.042	
Heptachlor epoxide	mg/kg	0.0067		0.004	P	0.021			U		U		U	---	
Methoxychlor	mg/kg	0.018	PJ		U	0.06	P		U		U		U	---	

TABLE 3-12 TOTAL ORGANIC CARBON ANALYTICAL RESULTS IN SEDIMENT

Parameter List USEPA Method 9060	Sample Location	SED-01			SED-02			SED-03		
	Sample Depth (in)	0-6	6-12	12-24	0-6	6-12	12-24	0-6	6-12	12-24
	Sample Date	1/14/2010			1/14/2010			1/14/2010		
	Sample Type	Composite			Composite			Composite		
Total Organic Compound	(mg/kg)	20000	20000	18000	29000	29000	32000	53000	50000	46000
Average Organic Carbon (OC)	mgOC/kg	28047								
Standard Deviation	mgOC/kg	14732								
Confidence Limit (95%)	mgOC/kg	7218								
Lower Confidence Limit	mgOC/kg	20829								
Parameter List USEPA Method 9060	Sample Location	SED-04			SED-05			SED-06		
	Sample Depth (in)	0-6	6-12	12-24	0-6	6-12	12-24	0-6	6-12	12-24
	Sample Date	1/14/2010			1/14/2010			1/14/2010		
	Sample Type	Composite			Composite			Composite		
Total Organic Compound	(mg/kg)	43000	23000	45000	6500	NA	NA	10000	NA	NA
Parameter List USEPA Method 9060	Sample Location	SED-11			SED-12			SED-DUP01 SED-11		
	Sample Depth (in)	0-6	6-12	12-24	0-6	6-12	12-24	0-6		
	Sample Date	1/14/2010			1/14/2010			1/14/2010		
	Sample Type	Composite			Composite			Composite		
Total Organic Compound	(mg/kg)	20000	NA	NA	8300	NA	NA	24000		

NOTE: USEPA = United States Environmental Protection Agency.

mg/kg = milligrams per kilogram = parts per million (ppm)

NA = Not analyzed.

Data provided by Mitkem. Only analytes that were detected in at least one sample are shown. Data validation to be completed by Environmental Data Validation, Inc.

TABLE 3-13 DERIVATION OF SEDIMENT CRITERIA FOR SELECT CONTAMINANTS OF CONCERN

Contaminant	Log K _{ow}	Value K _{ow}	% Carbon	Human Health Bioaccumulation			Benthic Aquatic Life Acute Toxicity			Benthic Aquatic Life Chronic Toxicity			Wildlife Bioaccumulation		
				Water Criteria µg/l	Sediment Criteria µg/gOC	Sediment Criteria µg/kg	Water Criteria µg/l	Sediment Criteria µg/gOC	Sediment Criteria µg/kg	Water Criteria µg/l	Sediment Criteria µg/gOC	Sediment Criteria µg/kg	Water Criteria µg/l	Sediment Criteria µg/gOC	Sediment Criteria µg/kg
VOLATILE ORGANIC COMPOUNDS															
1,1-dichloroethene	1.48	30.2	20.8290	0.8	0.02	5.0322									
1,2,4-trimethylbenzene	3.75	5,623.4	20.8290				290	1631	339677.2164	33	186	38652.9246			
Ethylbenzene	3.15	1,412.5	20.8290				150	212	44132.6168	17	24	5001.6966			
Isopropylbenzene	3.66	4,570.9	20.8290				23	105	21897.5868	2.6	12	2475.3794			
Naphthalene	3.37	2,344.2	20.8290				110	258	53710.7362	13	30	6347.6325			
Xylene	3.15	1,412.5	20.8290				590	833	173588.2926	65	92	19124.1339			
Toluene	2.69	489.8	20.8290				480	235	48967.6945	100	49	10201.6030			
Vinyl Chloride	0.6	4.0	20.8290	18.0000	0.0700	14.9259									
SEMIVOLATILE ORGANIC COMPOUNDS															
Acenaphthene	4.33	21,379.6	20.8290								140.0000	29160.6000			
Anthracene	4.45	28,183.8	20.8290				35.0000	986.0000	205464.3433	3.8000	107.0000	22307.5573			
Benzo(a)anthracene	5.61	407,380.3	20.8290				0.2300	94.0000	19516.2448	0.0300	12.0000	2545.5971			
Benzo(a)pyrene	6.04	1,096,478.2	20.8290	0.0012	1.3000	274.0625									
Bis(2-ethylhexyl)phthalate	5.3	199,526.2	20.8290							0.6000	199.5000	24935.5913			
Dichlorobenzenes	3.38	2,398.8	20.8290				50.0000	120.0000	24982.6454	5.0000	12.0000	2499.4800			
Fluoranthene	5.19	154,881.7	20.8290								1020.0000	212455.8000			
Fluorene	4.18	15,135.6	20.8290				4.8000	73.0000	15132.4643	0.5400	8.0000	1702.4022			
2-methylnaphthalene	3.86	7,244.4	20.8290				42.0000	304.0000	63374.9618	4.7000	34.0000	7081.8600			
Naphthalene	3.37	2,344.2	20.8290				110.0000	258.0000	53710.7362	13.0000	30.0000	6347.6325			
Phenanthrene	4.45	28,183.8	20.8290								120.0000	24994.8000			
Phenol	2	100.0	20.8290							5.0000	0.5000	104.1450			
Pyrene	5.32	208,929.6	20.8290				42.0000	8775.0000	1827753.8626	4.6000	961.0000	200182.5659			
PESTICIDES/POLYCHLORINATED BIPHENYLS															
Aldrin	5.0	100,000.0	20.8290	0.0010000	0.1000	20.8290							0.0077	0.7700	160.3833
a-BHC	3.8	6,309.6	20.8290	0.0090000	0.0600	11.8280	2.0000	12.6000	2628.4421	0.0100	0.0600	13.1422	0.2300	1.5000	302.2708
d-BHC	3.8	6,309.6	20.8290	0.0090000	0.0600	11.8280	2.0000	12.6000	2628.4421	0.0100	0.0600	13.1422	0.2300	1.5000	302.2708
g-BHC (Lindane)	3.8	6,309.6	20.8290	0.0090000	0.0600	11.8280	2.0000	12.6000	2628.4421	0.0100	0.0600	13.1422	0.2300	1.5000	302.2708
Chlordane	2.78	602.6	20.8290	0.0020000	0.0010	0.2510	2.4000	1.4000	301.2171	0.0430	0.0300	5.3968	0.0100	0.0060	1.2551
4,4'-DDD	6.0	1,000,000.0	20.8290	0.0000100	0.0100	2.0829							0.0010	1.0000	208.2900
4,4'-DDE	6.0	1,000,000.0	20.8290	0.0000100	0.0100	2.0829							0.0010	1.0000	208.2900
4,4'-DDT	6.0	1,000,000.0	20.8290	0.0000100	0.0100	2.0829	1.1000	1100.0000	229119.0000	0.0010	1.0000	208.2900	0.0010	1.0000	208.2900
Dieldrin	5.0	100,000.0	20.8290	0.0010000	0.1000	20.8290					9.0000	1874.6100	0.0077	0.7700	160.3833
Endosulfan (I)	3.55	3,548.1	20.8290				0.2200	0.7800	162.5890	0.0090	0.0300	6.6514			
Endosulfan (II)	3.55	3,548.1	20.8290				0.2200	0.7800	162.5890	0.0090	0.0300	6.6514			
Endosulfan Sulfate			20.8290												
Endrin	5.6	398,107.2	20.8290	0.0020000	0.8000	165.8435					4.0000	833.1600	0.0019	0.8000	157.5513
Endrin Ketone			20.8290												
Heptachlor	4.4	25,118.9	20.8290	0.0000300	0.0008	0.1570	0.5200	13.1000	2720.6443	0.0038	0.1000	19.8816	0.0010	0.0300	5.2320
Heptachlor Epoxide	4.4	25,118.9	20.8290	0.0000300	0.0008	0.1570	0.5200	13.1000	2720.6443	0.0038	0.1000	19.8816	0.0010	0.0300	5.2320
Methoxychlor	4.3	19,952.6	20.8290							0.0300	0.6000	124.6780			
PCBs (Total)	6.14	1,380,384.3	20.8290	0.0000006	0.0008	0.1725	2.0000	2760.8000	575040.4769	0.0140	19.3000	4025.2833	0.0010	1.4000	287.5202
NOTE: K _{ow} = µg/l = Micrograms per Liter. µg/gOC = Micrograms per gram organic carbon. µg/kg = Micrograms per kilogram. 4,4'-DDD = 4,4'-Dichlorodiphenyldichloroethane 4,4'-DDE = 4,4'-Dichlorodiphenyldichloroethylene 4,4'-DDT = 4,4'-Dichlorodiphenyltrichloroethane PCB = Polychlorinated Biphenyl.															

TABLE 3-14 VOLATILE ORGANIC COMPOUND DETECTIONS IN SEDIMENT

Parameter List USEPA Method 8260, LOW	Sample Location	SED-01						SED-02						SED-03						Sediment Criteria Benthic Aquatic Wildlife Chronic Toxicity or Human Health Bioaccumulation* (mg/kg)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/14/2010						1/14/2010						1/14/2010						
	Sample Type	Composite						Composite						Composite						
1,1-Dichloroethane	mg/kg	NR			U		U	NR			U		U	0.47	J	0.39	J		U	---
1,1-Dichloroethene	mg/kg	NR			U		U	NR			U		U		U		U		U	0.005*
1,2,4-Trimethylbenzene	mg/kg	NR		0.0067	J	0.075		NR		0.013		0.037			U		U		U	39
1,3,5-Trimethylbenzene	mg/kg	NR			U	0.02		NR		0.0052	J	0.012			U		U		U	---
2-Butanone	mg/kg	NR			U		U	NR			U		U		U		U		U	---
Acetone	mg/kg	NR		0.0098		0.0068	J	NR		0.024		0.011			U		U		U	---
Carbon disulfide	mg/kg	NR			U		U	NR			U		U		U		U		U	---
Chloroethane	mg/kg	NR			U		U	NR			U		U		U		U		U	---
cis-1,2-Dichloroethene	mg/kg	NR			U		U	NR			U		U	22		20		15		---
Ethylbenzene	mg/kg	NR			U	0.02		NR			U		U		U		U		U	5
Isopropylbenzene	mg/kg	NR			U	0.0051	J	NR			U	0.0033	J		U		U		U	2.5
m,p-Xylene	mg/kg	NR		0.0055	J	0.17		NR			U	0.009			U		U		U	19
Methylene chloride	mg/kg	NR			U		U	NR			U		U		U		U		U	---
Naphthalene	mg/kg	NR			U	0.0031	J	NR			U		U		U		U		U	6.3
n-Butylbenzene	mg/kg	NR			U	0.0029	J	NR			U	0.0029	J		U		U		U	---
n-Propylbenzene	mg/kg	NR			U	0.0098		NR			U	0.0056	J		U		U		U	---
o-Xylene	mg/kg	NR			U	0.051		NR			U		U		U		U		U	19
Toluene	mg/kg	NR			U	0.0044	J	NR			U		U		U		U		U	10
trans-1,2-Dichloroethene	mg/kg	NR			U		U	NR			U		U		U		U		U	---
Vinyl chloride	mg/kg	NR			U		U	NR			U		U	4.7	E	4.6		3.8		0.015*
Xylene (Total)	mg/kg	NR		0.0055	J	0.22		NR			U	0.009			U		U		U	19

NOTE: USEPA = United States Environmental Protection Agency.

mg/kg = Milligrams per kilogram

NR = No Recovery

U = Compound was analyzed for, but not detected.

J = Estimated Value.

E = Compound response exceeded the response of the highest standard in the initial calibration range of the instrument for that specific analysis.

Bold values indicate exceedence of Benthic Aquatic Life Chronic/Acute Toxicity.

Standards taken from NYSDEC Technical Guidance for Screening Contaminated Sediments (January 1999).

TABLE 3-14 VOLATILE ORGANIC COMPOUND DETECTIONS IN SEDIMENT

Parameter List USEPA Method 8260 LOW	Sample Location	SED-04						SED-05						SED-06						Sediment Criteria Benthic Aquatic Wildlife Chronic Toxicity or Human Health Bioaccumulation* (mg/kg)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/14/2010						1/14/2010						1/14/2010						
	Sample Type	Composite						Composite						Composite						
1,1-Dichloroethane	mg/kg		U		U		U		U	NR		NR		U	NR		NR		---	
1,1-Dichloroethene	mg/kg		U		U		U		U	NR		NR		U	NR		NR		0.005*	
1,2,4-Trimethylbenzene	mg/kg	0.0078	J	0.0019	J	0.023			U	NR		NR		U	NR		NR		39	
1,3,5-Trimethylbenzene	mg/kg		U		U	0.0071	J		U	NR		NR		U	NR		NR		---	
2-Butanone	mg/kg	0.044			U	0.014			U	NR		NR		U	NR		NR		---	
Acetone	mg/kg	0.18		0.04		0.11			U	NR		NR		U	NR		NR		---	
Carbon disulfide	mg/kg		U		U	0.0035	J		U	NR		NR		U	NR		NR		---	
Chloroethane	mg/kg		U		U		U		U	NR		NR		U	NR		NR		---	
cis-1,2-Dichloroethene	mg/kg		U	0.0047	J		U	0.0015	J	NR		NR		U	NR		NR		---	
Ethylbenzene	mg/kg		U		U		U		U	NR		NR		U	NR		NR		5	
Isopropylbenzene	mg/kg		U		U		U		U	NR		NR		U	NR		NR		2.5	
m,p-Xylene	mg/kg		U		U		U		U	NR		NR		U	NR		NR		19	
Methylene chloride	mg/kg		U		U		U		U	NR		NR		U	NR		NR		---	
Naphthalene	mg/kg	0.0084	J		U	0.0026	J		U	NR		NR		U	NR		NR		6.3	
n-Butylbenzene	mg/kg		U		U	0.007	J		U	NR		NR		U	NR		NR		---	
n-Propylbenzene	mg/kg		U		U		U		U	NR		NR		U	NR		NR		---	
o-Xylene	mg/kg		U		U	0.0026	J		U	NR		NR		U	NR		NR		19	
Toluene	mg/kg		U		U		U		U	NR		NR		U	NR		NR		10	
trans-1,2-Dichloroethene	mg/kg		U		U		U		U	NR		NR		U	NR		NR		---	
Vinyl chloride	mg/kg		U		U		U		U	NR		NR		U	NR		NR		0.015*	
Xylene (Total)	mg/kg		U		U	0.0026	J		U	NR		NR		U	NR		NR		19	

TABLE 3-14 VOLATILE ORGANIC COMPOUND DETECTIONS IN SEDIMENT

Parameter List USEPA Method 8260, LOW	Sample Location	SED-11						SED-12						SED-DUP01 SED-11	Sediment Criteria Benthic Aquatic Wildlife Chronic Toxicity or Human Health Bioaccumulation* (mg/kg)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6	
	Sample Date	1/14/2010						1/14/2010						1/14/2010	
	Sample Type	Composite						Composite						Composite	
1,1-Dichloroethane	mg/kg		U	NR		NR			U	NR		NR		U	---
1,1-Dichloroethene	mg/kg		U	NR		NR			U	NR		NR		U	0.005*
1,2,4-Trimethylbenzene	mg/kg		U	NR		NR			U	NR		NR		U	39
1,3,5-Trimethylbenzene	mg/kg		U	NR		NR			U	NR		NR		U	---
2-Butanone	mg/kg		U	NR		NR			U	NR		NR		U	---
Acetone	mg/kg		U	NR		NR			U	NR		NR	0.013		---
Carbon disulfide	mg/kg		U	NR		NR			U	NR		NR		U	---
Chloroethane	mg/kg		U	NR		NR			U	NR		NR		U	---
cis-1,2-Dichloroethene	mg/kg		U	NR		NR		0.0031	J	NR		NR		U	---
Ethylbenzene	mg/kg		U	NR		NR			U	NR		NR		U	5
Isopropylbenzene	mg/kg		U	NR		NR			U	NR		NR		U	2.5
m,p-Xylene	mg/kg		U	NR		NR			U	NR		NR		U	19
Methylene chloride	mg/kg		U	NR		NR			U	NR		NR		U	---
Naphthalene	mg/kg		U	NR		NR			U	NR		NR		U	6.3
n-Butylbenzene	mg/kg		U	NR		NR			U	NR		NR		U	---
n-Propylbenzene	mg/kg		U	NR		NR			U	NR		NR		U	---
o-Xylene	mg/kg		U	NR		NR			U	NR		NR		U	19
Toluene	mg/kg		U	NR		NR			U	NR		NR	0.0039	J	10
trans-1,2-Dichloroethene	mg/kg		U	NR		NR			U	NR		NR		U	---
Vinyl chloride	mg/kg		U	NR		NR			U	NR		NR		U	0.015*
Xylene (Total)	mg/kg		U	NR		NR			U	NR		NR		U	19

TABLE 3-15 SEMIVOLATILE ORGANIC COMPOUND DETECTIONS IN SEDIMENT

Parameter List USEPA Method 8270	Sample Location	SED-01						SED-02						SED-03						Sediment Criteria Benthic Aquatic Wildlife Chronic Toxicity or Human Health Bioaccumulation* (mg/kg)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/14/2010						1/14/2010						1/14/2010						
	Sample Type	Composite						Composite						Composite						
1,2-Dichlorobenzene	mg/kg	NR			U		U	NR			U		U		U		U		U	2.5
2-Methylnaphthalene	mg/kg	NR		0.12	J	0.21	J	NR		0.069	J	0.096	J	0.19	J	0.16	J	0.087	J	7
4-Chloroaniline	mg/kg	NR			U		U	NR			U		U	0.37	J	0.19	J	0.18	J	---
4-Methylphenol	mg/kg	NR			U		U	NR			U		U	0.1	J	0.074	J		U	---
Acenaphthene	mg/kg	NR			U		U	NR		0.13	J	0.11	J	0.82	J	0.51	J	0.39	J	29
Acenaphthylene	mg/kg	NR		0.096	J	0.062	J	NR		0.36	J	0.23	J	1.5		1.1		0.73		---
Anthracene	mg/kg	NR		0.11	J	0.069	J	NR		0.52	J	0.38	J	3.1		2		1.5		22
Benzo(a)anthracene	mg/kg	NR		0.27	J	0.16	J	NR		0.94		0.69		5.7		3.9		3		2.5
Benzo(a)pyrene	mg/kg	NR		0.28	J	0.18	J	NR		1		0.73		5.6		4		2.8		0.27*
Benzo(b)fluoranthene	mg/kg	NR		0.41	J	0.27	J	NR		1.5		0.95		8.2		5.8		4		---
Benzo(g,h,i)perylene	mg/kg	NR		0.2	J	0.15	J	NR		0.8		0.57		4		2.9		2		---
Benzo(k)fluoranthene	mg/kg	NR		0.15	J	0.091	J	NR		0.7		0.43	J	3.1		2.6		2		---
Bis(2-ethylhexyl)phthalate	mg/kg	NR			U	0.18	J	NR		0.88		0.62		2.2		1.5		1.2		25
Butylbenzylphthalate	mg/kg	NR			U		U	NR			U		U		U		U		U	---
Carbazole	mg/kg	NR			U		U	NR		0.11	J	0.073	J	0.74	J	0.39	J	0.33	J	---
Chrysene	mg/kg	NR		0.31	J	0.2	J	NR		1.4		0.9		7.4		5.3		3.8		---
Dibenzo(a,h)anthracene	mg/kg	NR			U		U	NR		0.21	J	0.16	J	1.1		0.75		0.53	J	---
Dibenzofuran	mg/kg	NR			U		U	NR			U	0.058	J	0.44	J	0.28	J	0.21	J	---
Di-n-butylphthalate	mg/kg	NR			U		U	NR			U		U		U		U		U	---
Di-n-octylphthalate	mg/kg	NR			U		U	NR			U		U		U		U		U	---
Fluoranthene	mg/kg	NR		0.61		0.38	J	NR		3		2		18	D	11		8.9		212
Fluorene	mg/kg	NR		0.049	J		U	NR		0.21	J	0.18	J	1.4		0.88		0.69	J	1.7
Indeno(1,2,3-cd)pyrene	mg/kg	NR		0.22	J	0.15	J	NR		0.8		0.53	J	3.8		2.8		2		---
Naphthalene	mg/kg	NR			U		U	NR			U		U		U	0.17	J		U	6.3
Phenanthrene	mg/kg	NR		0.25	J	0.17	J	NR		1.1		0.9		5.9		4.6		2.7		25
Phenol	mg/kg	NR			U		U	NR			U		U		U	0.12	J		U	0.1
Pyrene	mg/kg	NR		0.5		0.31	J	NR		2.2		1.6		12		8.7		6.7		200
NOTE: USEPA = United States Environmental Protection Agency. mg/kg = Milligrams per kilogram. NR = No Recovery U = Compound was analyzed for, but not detected. J = Estimated Value. --- = Bold values indicate exceedence of Benthic Aquatic Life Chronic/Acute Toxicity. Standards taken from NYSDEC Technical Guidance for Screening Contaminated Sediments (January 1999)																				

TABLE 3-15 SEMIVOLATILE ORGANIC COMPOUND DETECTIONS IN SEDIMENT

Parameter List USEPA Method 8270	Sample Location	SED-04						SED-05						SED-06						Sediment Criteria Benthic Aquatic Wildlife Acute* Chronic Toxicity (mg/kg)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/14/2010						1/14/2010						1/14/2010						
	Sample Type	Composite						Composite						Composite						
1,2-Dichlorobenzene	mg/kg		U		U		U		U	NR		NR			U	NR		NR		2.5
2-Methylnaphthalene	mg/kg	0.44	J	0.56		1.2			U	NR		NR		0.077	J	NR		NR		7
4-Chloroaniline	mg/kg	0.13	J		U	0.35	J		U	NR		NR			U	NR		NR		---
4-Methylphenol	mg/kg	0.088	J		U	0.21	J		U	NR		NR			U	NR		NR		---
Acenaphthene	mg/kg	1.5		1.1		2.9		0.1	J	NR		NR		0.55		NR		NR		29
Acenaphthylene	mg/kg	2.1		0.85		2.5		0.13	J	NR		NR		0.36	J	NR		NR		---
Anthracene	mg/kg	4.8		2.4		8.9		0.37	J	NR		NR		1.9		NR		NR		22
Benzo(a)anthracene	mg/kg	8.6		3.5		15	D	1.6		NR		NR		6.9		NR		NR		2.5
Benzo(a)pyrene	mg/kg	7.5		3		13	D	1.3		NR		NR		5.7		NR		NR		0.27*
Benzo(b)fluoranthene	mg/kg	9.6		3.6		17	D	1.7		NR		NR		10	D	NR		NR		---
Benzo(g,h,i)perylene	mg/kg	5		1.9		7.9		0.83		NR		NR		3.7		NR		NR		---
Benzo(k)fluoranthene	mg/kg	4.6		2.2		7.9		0.8		NR		NR		3.2		NR		NR		---
Bis(2-ethylhexyl)phthalate	mg/kg	1.3		0.77		4.4		0.32	J	NR		NR		1.1		NR		NR		25
Butylbenzylphthalate	mg/kg		U		U	0.12	J		U	NR		NR		0.12	J	NR		NR		---
Carbazole	mg/kg	1.2		0.57		2		0.23	J	NR		NR		1.1		NR		NR		---
Chrysene	mg/kg	9.6		4		17	D	1.7		NR		NR		7		NR		NR		---
Dibenzo(a,h)anthracene	mg/kg	1.6		0.52		2.4		0.25	J	NR		NR		1.1		NR		NR		---
Dibenzofuran	mg/kg	0.88		0.68		1.9		0.064	J	NR		NR		0.32	J	NR		NR		---
Di-n-butylphthalate	mg/kg		U		U	0	U		U	NR		NR		0.11	J	NR		NR		---
Di-n-octylphthalate	mg/kg		U		U	0	U		U	NR		NR			U	NR		NR		---
Fluoranthene	mg/kg	26	D	11	D	43	D	4		NR		NR		19	D	NR		NR		212
Fluorene	mg/kg	2.5		1.6		5		0.15	J	NR		NR		0.77		NR		NR		1.7
Indeno(1,2,3-cd)pyrene	mg/kg	4.6		1.9		7.6		0.83		NR		NR		3.7		NR		NR		---
Naphthalene	mg/kg	0.33	J	0.27	J	0.66	J		U	NR		NR			U	NR		NR		6.3
Phenanthrene	mg/kg	19	D	10	D	33	D	1.9		NR		NR		10	D	NR		NR		25
Phenol	mg/kg		U		U		U		U	NR		NR			U	NR		NR		0.1
Pyrene	mg/kg	20	D	8.8	D	33	D	2.9		NR		NR		14	D	NR		NR		200
NOTE: D = Dilution of sample or extract.																				

NOTE: D = Dilution of sample or extract.

TABLE 3-15 SVOC DETECTIONS IN SEDIMENT

Parameter List USEPA Method 8270	Sample Location	SED-11					SED-12					SED-DUP01 SED-11		Sediment Criteria Benthic Aquatic Wildlife Acute Chronic Toxicity or Human Health Bioaccumulation* (mg/kg)
	Sample Depth (in)	0-6	6-12	12-24			0-6	6-12	12-24			0-6		
	Sample Date	1/14/2010					1/14/2010					1/14/2010		
	Sample Type	Composite					Composite					Composite		
1,2-Dichlorobenzene	mg/kg		U	NR		NR	0.25	J	NR		NR		U	2.5
2-Methylnaphthalene	mg/kg	0.068	J	NR		NR	0.58		NR		NR	0.11	J	7
4-Chloroaniline	mg/kg		U	NR		NR	0.081	J	NR		NR		U	---
4-Methylphenol	mg/kg		U	NR		NR		U	NR		NR	0.1	J	---
Acenaphthene	mg/kg	0.3	J	NR		NR	2.8		NR		NR	0.46	J	29
Acenaphthylene	mg/kg	0.4	J	NR		NR	0.86		NR		NR	0.72		---
Anthracene	mg/kg	1.2		NR		NR	6.5		NR		NR	1.8		22
Benzo(a)anthracene	mg/kg	3.7		NR		NR	17	D	NR		NR	6.3		2.5
Benzo(a)pyrene	mg/kg	3.4		NR		NR	14	D	NR		NR	6.1		0.27*
Benzo(b)fluoranthene	mg/kg	4.9		NR		NR	18	D	NR		NR	8.4	D	---
Benzo(g,h,i)perylene	mg/kg	2.2		NR		NR	6.4		NR		NR	4.8		---
Benzo(k)fluoranthene	mg/kg	2		NR		NR	5.2		NR		NR	3.2		---
Bis(2-ethylhexyl)phthalate	mg/kg	0.72		NR		NR	1		NR		NR	2.2		25
Butylbenzylphthalate	mg/kg		U	NR		NR	8.8	D	NR		NR	0.17	J	---
Carbazole	mg/kg	0.46	J	NR		NR	3.5		NR		NR	0.84		---
Chrysene	mg/kg	4.1		NR		NR	18	D	NR		NR	7.5		---
Dibenzo(a,h)anthracene	mg/kg	0.63		NR		NR	2		NR		NR	1		---
Dibenzofuran	mg/kg	0.15	J	NR		NR	1.9		NR		NR	0.24	J	---
Di-n-butylphthalate	mg/kg	0.051	J	NR		NR	0.045	J	NR		NR	0.097	J	---
Di-n-octylphthalate	mg/kg		U	NR		NR	0	U	NR		NR	0.11	J	---
Fluoranthene	mg/kg	9.4	D	NR		NR	45	D	NR		NR	15	D	212
Fluorene	mg/kg	0.36	J	NR		NR	3.5		NR		NR	0.6		1.7
Indeno(1,2,3-cd)pyrene	mg/kg	2.2		NR		NR	6.4		NR		NR	4.4		---
Naphthalene	mg/kg		U	NR		NR	0.73		NR		NR	0.12	J	6.3
Phenanthrene	mg/kg	4		NR		NR	34	D	NR		NR	6.2		25
Phenol	mg/kg		U	NR		NR		U	NR		NR		U	0.1
Pyrene	mg/kg	6.5		NR		NR	34	D	NR		NR	12	D	200

TABLE 3-16 METAL DETECTIONS IN SEDIMENT

Parameter List USEPA Method 6010 & 7471	Sample Location	SED-01						SED-02						SED-03						NYSDEC Sediment Criteria Lowest Effect Level (ppm)	NYSDEC Sediment Criteria Severe Effect Level (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24			
	Sample Date	1/14/2010						1/14/2010						1/14/2010							
	Sample Type	Composite						Composite						Composite							
Aluminum	mg/kg	NR		6040		6160		NR		7110		9570		7340		7110		12100		---	---
Arsenic	mg/kg	NR		5		5.7		NR		7.9		8.4		12.7		7.7		4.4		6.0	33.0
Barium	mg/kg	NR		45	J	55.1	J	NR		72.5	J	94.7	J	157	J	131	J	201	J	---	---
Beryllium	mg/kg	NR		0.23	J	0.24	J	NR		0.29	J	0.38	J	0.38	J	0.3	J	0.18	J	---	---
Cadmium	mg/kg	NR		1.3		1.6		NR		0.96		1.5		3.7		1.4		0.33	B	0.6	9.0
Calcium	mg/kg	NR		20900		37200		NR		250000		40600		66400		23800		9380		---	---
Chromium	mg/kg	NR		88.6	J	137	J	NR		173	J	323	J	557	J	222	J	67	J	26.0	110
Cobalt	mg/kg	NR		6.2	J	6	J	NR		5.2	J	9.1	J	6.2	J	5.1	J	4.7	J	---	---
Copper	mg/kg	NR		230	J	474	J	NR		243	J	494	J	460	J	123	J	50.6	J	16.0	110
Iron	mg/kg	NR		20100	J	24300	J	NR		18000	J	35700	J	31800	J	14400	J	22100	J	2.0%	4.0%
Lead	mg/kg	NR		23	J	32	J	NR		54	J	80.4	J	334	J	148	J	45.8	J	31.0	110
Magnesium	mg/kg	NR		8900	J	8900	J	NR		10100	J	11600	J	11600	J	5490	J	5340	J	---	---
Manganese	mg/kg	NR		285	J	305	J	NR		523	J	552	J	287	J	147	J	150	J	460	1,100
Mercury	mg/kg	NR		0.11		0.12		NR		0.21		0.13			U	0.15		0.36		0.15	1.3
Nickel	mg/kg	NR		81.4	J	128	J	NR		74.8	J	172	J	192	J	77	J	31	J	16.0	50.0
Potassium	mg/kg	NR		899	J	816	J	NR		1020	J	1240	J	1080	J	898	J	1510	J	---	---
Selenium	mg/kg	NR			U		U	NR			J		U		U	1.2		1.7		---	---
Silver	mg/kg	NR		0.5		0.27		NR		0.24		0.52	J	2.7		0.54			U	1	2.2
Sodium	mg/kg	NR		684		696		NR		567		540		345		206		214		---	---
Thallium	mg/kg	NR		0.73		1		NR		3.6		1.3	B	1.4		0.58			U	---	---
Vanadium	mg/kg	NR		13		14.3		NR		14.3		21.7		27.5		24		24.7		---	---
Zinc	mg/kg	NR		684	J	1480	J	NR		733	J	2690	J	631	J	192	J	94.6	J	120	270

NOTE: USEPA = United States Environmental Protection Agency.

NYSDEC = New York State Department of Environmental Conservation.

ppm = Parts per million.

mg/kg = Milligrams per kilogram.

NR = No Recovery

J = Less than Contract Required Quantitation Limit, but greater than or equivalent to Method Detection Limit.

B =

U = Less than Method Detection Limit.

Bold values indicate exceedence of Lowest Effect Level; **bold** and shaded values indicate exceedence of Lowest and Severe Effect Levels.

Standards taken from NYSDEC Technical Guidance for Screening Contaminated Sediments (January 1999)

TABLE 3-16 METAL DETECTIONS IN SEDIMENT

Parameter List USEPA Method 6010 & 7471	Sample Location	SED-04						SED-05						SED-06						NYSDEC Sediment Criteria Lowest Effect Level (ppm)	NYSDEC Sediment Criteria Severe Effect Level (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24			
	Sample Date	1/14/2010						1/14/2010						1/14/2010							
	Sample Type	Composite						Composite						Composite							
Aluminum	mg/kg	8070		5820		6980		983		NR		NR		2210		NR		NR		---	---
Arsenic	mg/kg	12.2		4.2		11.3		5.8		NR		NR		3.2		NR		NR		6.0	33.0
Barium	mg/kg	163	J	56.8	J	150	J	12	J	NR		NR		31.7	J	NR		NR		---	---
Beryllium	mg/kg	0.47	J	0.36	J	0.36	J	0.082	J	NR		NR		0.11	J	NR		NR		---	---
Cadmium	mg/kg	7.7		1.5		4.7		0.31		NR		NR		0.33		NR		NR		0.6	9.0
Calcium	mg/kg	51900		23600		68800		263000		NR		NR		115000		NR		NR		---	---
Chromium	mg/kg	912	J	191	J	631	J	29.2	J	NR		NR		21.7	J	NR		NR		26.0	110
Cobalt	mg/kg	7	J	5.8	J	6.5	J	2.4	J	NR		NR		2.5	J	NR		NR		---	---
Copper	mg/kg	850	J	159	J	374	J	53.1	J	NR		NR		59.1	J	NR		NR		16.0	110
Iron	mg/kg	19800	J	11800	J	17900	J	39200	J	NR		NR		10100	J	NR		NR		2.0%	4.0%
Lead	mg/kg	324	J	79.3	J	489	J	13.7	J	NR		NR		47.5	J	NR		NR		31.0	110
Magnesium	mg/kg	10400	J	9440	J	12000	J	13700	J	NR		NR		10900	J	NR		NR		---	---
Manganese	mg/kg	390	J	166	J	289	J	235	J	NR		NR		148	J	NR		NR		460	1,100
Mercury	mg/kg	0.56		0.16		0.13		0.01	B	NR		NR		0.11		NR		NR		0.15	1.3
Nickel	mg/kg	312	J	71.3	J	187	J	11	J	NR		NR		9.7	J	NR		NR		16.0	50.0
Potassium	mg/kg	1040	J	676	J	1010	J	337	J	NR		NR		432	J	NR		NR		---	---
Selenium	mg/kg	1.6		1.2			U		U	NR		NR			U	NR		NR		---	---
Silver	mg/kg	10.3		1.6	B	4.6			U	NR		NR			U	NR		NR		1	2.2
Sodium	mg/kg	441		172		339		197		NR		NR		280		NR		NR		---	---
Thallium	mg/kg	1.5		0.81	B	1.2		3.1		NR		NR		1.5		NR		NR		---	---
Vanadium	mg/kg	25		14.6		30.1		6.4		NR		NR		12.5		NR		NR		---	---
Zinc	mg/kg	457	J	112	J	401	J	34.8	J	NR		NR		135	J	NR		NR		120	270

TABLE 3-16 METAL DETECTIONS IN SEDIMENT

Parameter List USEPA Method 6010 & 7471	Sample Location	SED-11						SED-12						SED-DUP01 SED-11			NYSDEC Sediment Criteria Lowest Effect Level (ppm)	NYSDEC Sediment Criteria Severe Effect Level (ppm)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6				
	Sample Date	1/14/2010						1/14/2010						1/14/2010				
	Sample Type	Composite						Composite						Composite				
Aluminum	mg/kg	3290		NR		NR		2120		NR		NR		4020		---	---	
Arsenic	mg/kg	7.2		NR		NR		2.6		NR		NR		9.7		6.0	33.0	
Barium	mg/kg	32.5	J	NR		NR		25.6		NR		NR		40.8		---	---	
Beryllium	mg/kg	0.15	J	NR		NR		0.11		NR		NR		0.17		---	---	
Cadmium	mg/kg	0.52		NR		NR		0.3		NR		NR		0.66		0.6	9.0	
Calcium	mg/kg	103000		NR		NR		197000		NR		NR		86600		---	---	
Chromium	mg/kg	42.1	J	NR		NR		45.3		NR		NR		51.9		26.0	110	
Cobalt	mg/kg	3.2	J	NR		NR		2		NR		NR		3.8		---	---	
Copper	mg/kg	49.6	J	NR		NR		57.5		NR		NR		61.4		16.0	110	
Iron	mg/kg	9080	J	NR		NR		7740		NR		NR		10600		2.0%	4.0%	
Lead	mg/kg	70.2	J	NR		NR		30.3		NR		NR		66.2		31.0	110	
Magnesium	mg/kg	9650	J	NR		NR		18600		NR		NR		10900		---	---	
Manganese	mg/kg	210	J	NR		NR		185		NR		NR		200		460	1,100	
Mercury	mg/kg	0.11		NR		NR		0.027		NR		NR		3.1		0.15	1.3	
Nickel	mg/kg	16.9	J	NR		NR		13.4		NR		NR		21.4		16.0	50.0	
Potassium	mg/kg	601	J	NR		NR		457		NR		NR		649		---	---	
Selenium	mg/kg		U	NR		NR		1.2		NR		NR			U	---	---	
Silver	mg/kg		U	NR		NR			U	NR		NR		0.15		1	2.2	
Sodium	mg/kg	300		NR		NR		224		NR		NR		343		---	---	
Thallium	mg/kg	1.6		NR		NR		2.7		NR		NR		1.1		---	---	
Vanadium	mg/kg	12.6		NR		NR		12.2		NR		NR		14.9		---	---	
Zinc	mg/kg	113	J	NR		NR		113		NR		NR		159		120	270	

TABLE 3-17 POLYCHLORINATED BIPHENYL DETECTIONS IN SEDIMENT

Parameter List USEPA Method 8082	Sample Location	SED-01						SED-02						SED-03						Sediment Criteria Human Health Bioaccumulation (mg/kg)	
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24			
	Sample Date	1/14/2010						1/14/2010						1/14/2010							
	Sample Type	Composite						Composite						Composite							
Aroclor-1242	mg/kg	NR			U		U	NR			U		U	48			19		13	D	---
Aroclor-1248	mg/kg	NR		6.3	J	31		NR		16		25		U		U			U	---	
Aroclor-1254	mg/kg	NR		3.1		11		NR		8.2		13		9.4			4.1		2.7	D	---
Aroclor Total	mg/kg	NR		9.4		42		NR		24.2		38		57.4			23.1		15.3		0.0002
Parameter List USEPA Method 8082	Sample Location	SED-04						SED-05						SED-06						Sediment Criteria Human Health Bioaccumulation (mg/kg)	
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24			
	Sample Date	1/14/2010						1/14/2010						1/14/2010							
	Sample Type	Composite						Composite						Composite							
Aroclor-1242	mg/kg	23		9.4		56			U	NR		NR			U	NR		NR		---	
Aroclor-1248	mg/kg		U		U		U	0.41	J	NR		NR		0.061	J	NR		NR		---	
Aroclor-1254	mg/kg	4		2.1		8.3			U	NR		NR			U	NR		NR		---	
Aroclor Total	mg/kg	27		11.5		64.3		0.41		NR		NR		0.061		NR		NR		0.0002	
Parameter List USEPA Method 8082	Sample Location	SED-11						SED-12						SED-DUP01 SED-11		Sediment Criteria Benthic Aquatic Wildlife Acute* Chronic Toxicity (mg/kg)					
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6							
	Sample Date	1/14/2010						1/14/2010						1/14/2010							
	Sample Type	Composite						Composite						Composite							
Aroclor-1242	mg/kg		U	NR		NR			U	NR		NR				U	---				
Aroclor-1248	mg/kg	1.4		NR		NR		1.8	J	NR		NR		1.8			---				
Aroclor-1254	mg/kg	0.57		NR		NR		0.79		NR		NR				U	---				
Aroclor Total	mg/kg	1.97		NR		NR		2.59		NR		NR		1.8			4				
NOTE: USEPA = United States Environmental Protection Agency. mg/kg = Milligrams per kilogram. NR = No Recovery U = Compound was analyzed for, but not detected. D = Secondary Dilution Factor. --- = J = Estimated Value. Bold values indicate exceedence of Benthic Aquatic Life Chronic/Acute Toxicity. Standards taken from NYSDEC Technical Guidance for Screening Contaminated Sediments (January 1999).																					

TABLE 3-18 PESTICIDE DETECTIONS IN SEDIMENT

Parameter List USEPA Method 8081	Sample Location	SED-01						SED-02						SED-03						Sediment Criteria Benthic Aquatic Wildlife Chronic Toxicity* or Human Health Bioaccumulation or Wildlife Bioaccumulation** (mg/kg)
	Sample Depth (in)	0-6		6-12		12-24		0-6		6-12		12-24		0-6		6-12		12-24		
	Sample Date	1/14/2010						1/14/2010						1/14/2010						
	Sample Type	Composite						Composite						Composite						
4,4'-DDD	mg/kg	NR		0.051	P		U	NR		0.16	J		U		U		U	0.02	J	0.002
4,4'-DDE	mg/kg	NR		0.066		0.28	J	NR		0.13	J	0.28			U		U	0.059		0.002
4,4'-DDT	mg/kg	NR		0.11		0.41		NR		0.18		0.31		0.27		0.14		0.069		0.002
alpha-Chlordane	mg/kg	NR			U		U	NR			U		U		U		U		U	0.0003
beta-BHC	mg/kg	NR			U		U	NR			U		U		U		U		U	0.013*
delta-BHC	mg/kg	NR			U		U	NR			U		U		U		U		U	0.013*
Dieldrin	mg/kg	NR		0.053	J		U	NR			U		U		U		U	0.027	J	0.0003
Endosulfan I	mg/kg	NR			U		U	NR			U		U		U		U	0.013	J	0.007*
Endosulfan sulfate	mg/kg	NR			U		U	NR			U		U		U		U	0.018		---
Endrin aldehyde	mg/kg	NR			U		U	NR			U		U		U		U	0.021		---
gamma-BHC (Lindane)	mg/kg	NR			U		U	NR			U		U	0.32	J	0.15	J	0.085	D	0.013*
gamma-Chlordane	mg/kg	NR		0.097		0.44	J	NR		0.27	J	0.47	J	0.21	J	0.092	J	0.069	D	0.0003
Heptachlor	mg/kg	NR		0.12	J	0.48	J	NR		0.33		0.53		0.45	J	0.28		0.15	D	0.005**
Heptachlor epoxide	mg/kg	NR			U		U	NR			U		U		U		U		U	0.005**

NOTE: USEPA = United States Environmental Protection Agency.
mg/kg = Milligrams per kilogram.
4,4'-DDD = 4,4'-Dichlorodiphenyldichloroethane
NR = No Recovery
P =
U = Compound was analyzed for, but not detected.
J = Estimated Value.
4,4'-DDE = 4,4'-Dichlorodiphenyldichloroethylene
4,4'-DDT = 4,4'-Dichlorodiphenyltrichloroethane
--- =
D = Dilution of sample or extract.

Bold values indicate exceedence of Benthic Aquatic Life Chronic/Acute Toxicity.

Standards taken from NYSDEC Technical Guidance for Screening Contaminated Sediments (January 1999).

TABLE 3-18 PESTICIDE DETECTIONS IN SEDIMENT

Parameter List USEPA Method 8081	Sample Location	SED-04						SED-05						SED-06						Sediment Criteria Benthic Aquatic Wildlife Chronic Toxicity* or Human Health Bioaccumulation or Wildlife Bioaccumulation** (mg/kg)
	Sample Depth (in)	0-6	6-12	12-24	0-6	6-12	12-24	0-6	6-12	12-24	0-6	6-12	12-24							
	Sample Date	1/14/2010						1/14/2010						1/14/2010						
	Sample Type	Composite						Composite						Composite						
4,4'-DDD	mg/kg		U		U		U		U	NR		NR		0.0078	J	NR		NR		0.002
4,4'-DDE	mg/kg		U		U		U		U	NR		NR			U	NR		NR		0.002
4,4'-DDT	mg/kg	0.13		0.077			U	0.0045		NR		NR		0.0083		NR		NR		0.002
alpha-Chlordane	mg/kg		U		U		U		U	NR		NR		0.0044	J	NR		NR		0.0003
beta-BHC	mg/kg		U		U		U	0.006	J	NR		NR			U	NR		NR		0.013*
delta-BHC	mg/kg		U		U		U	0.01	J	NR		NR			U	NR		NR		0.013*
Dieldrin	mg/kg		U		U		U		U	NR		NR			U	NR		NR		0.0003
Endosulfan I	mg/kg		U		U		U		U	NR		NR			U	NR		NR		0.007*
Endosulfan sulfate	mg/kg		U		U		U		U	NR		NR		0.0056	J	NR		NR		---
Endrin aldehyde	mg/kg		U		U		U		U	NR		NR		0.0047	J	NR		NR		---
gamma-BHC (Lindane)	mg/kg	0.33	J	0.13	J	0.24	J	0.0031	J	NR		NR			U	NR		NR		0.013*
gamma-Chlordane	mg/kg		U	0.048	J		U	0.019		NR		NR		0.03		NR		NR		0.0003
Heptachlor	mg/kg	0.16	P	0.087	J	0.66			U	NR		NR			U	NR		NR		0.005**
Heptachlor epoxide	mg/kg		U		U		U	0.012		NR		NR			U	NR		NR		0.005**

TABLE 3-18 PESTICIDE DETECTIONS IN SEDIMENT

Parameter List USEPA Method 8081	Sample Location	SED-11						SED-12						SED-DUP01 SED-11		Sediment Criteria Benthic Aquatic Wildlife Chronic Toxicity* or Human Health Bioaccumulation or Wildlife Bioaccumulation** (mg/kg)
	Sample Depth (in)	0-6	6-12	12-24				0-6	6-12	12-24				0-6		
	Sample Date	1/14/2010						1/14/2010						1/14/2010		
	Sample Type	Composite						Composite						Composite		
4,4'-DDD	mg/kg	0.0055	J	NR		NR		0.011	P	NR		NR			U	0.002
4,4'-DDE	mg/kg	0.008	J	NR		NR		0.014		NR		NR			U	0.002
4,4'-DDT	mg/kg	0.016		NR		NR		0.022		NR		NR		0.031		0.002
alpha-Chlordane	mg/kg		U	NR		NR		0.0065		NR		NR			U	0.0003
beta-BHC	mg/kg	0.011		NR		NR			U	NR		NR		0.022	J	0.013*
delta-BHC	mg/kg	0.031		NR		NR			U	NR		NR			U	0.013*
Dieldrin	mg/kg	0.0067	J	NR		NR			U	NR		NR			U	0.0003
Endosulfan I	mg/kg		U	NR		NR			U	NR		NR			U	0.007*
Endosulfan sulfate	mg/kg	0.0055	J	NR		NR			U	NR		NR		0.024	J	---
Endrin aldehyde	mg/kg	0.0069	J	NR		NR			U	NR		NR			U	---
gamma-BHC (Lindane)	mg/kg	0.0033	J	NR		NR		0.0063	J	NR		NR		0.011	J	0.013*
gamma-Chlordane	mg/kg	0.013	J	NR		NR		0.019	J	NR		NR		0.027	J	0.0003
Heptachlor	mg/kg	0.0028	J	NR		NR		0.0043	J	NR		NR			U	0.005**
Heptachlor epoxide	mg/kg		U	NR		NR			U	NR		NR			U	0.005**

TABLE 3-19 VOLATILE ORGANIC COMPOUND DETECTIONS IN GROUNDWATER

Parameter List (Detections Only) USEPA Method 8260	Sample Location	MW-01		MW-02		MW-03		DUPLICATE		AWQS and Guidance Values(Class GA H (WS)
	Sample Date	5/24/2010		5/24/2010		5/24/2010		5/24/2010		
	Sample Type	Groundwater		Groundwater		Groundwater		Groundwater		
Methyl tert-butyl ether	µg/L	4.2	J	3.4	J		U	4.4	J	---
(a) Division of Water Technical and Operational Guidance Series (1.1.1), June 1998										
NOTE: USEPA = United States Environmental Protection Agency.										
AWQS = Ambient Water Quality Standard.										
H (WS) = Health (Water Source)										
µg/L = Micrograms per Liter.										
J = Estimated Value.										
U = Compound was analyzed for, but not detected.										
--- =										

TABLE 3-20 SEMIVOLATILE ORGANIC COMPOUND DETECTIONS IN GROUNDWATER

Parameter List (Detections Only) USEPA Method 8270	Sample Location	MW-01		MW-02		MW-03		DUPLICATE		AWQS and Guidance Values ^(a) Class GA H (WS)
	Sample Date	5/24/2010		5/24/2010		5/24/2010		5/24/2010		
	Sample Type	Groundwater		Groundwater		Groundwater		Groundwater		
Bis(2-ethylhexyl)phthalate						4.5	J			5
(a) Division of Water Technical and Operational Guidance Series (1.1.1), June 1998										
NOTE: USEPA = United States Environmental Protection Agency.										
AWQS = Ambient Water Quality Standard.										
H (WS) = Health (Water Source)										
J = Estimated Value.										

TABLE 3-21 METAL DETECTIONS IN GROUNDWATER

Parameter List (Detections Only) USEPA Method 6010 & 7470	Sample Location	OLCCMW-01		OLCCMW-01F		OLCCMW-02		OLCCMW-02-F		OLCCMW-03		OLCCMW-03F		OLCCDUPLICATE MW-01		OLCCDUPLICATE-F MW-01F		AWQS and Guidance Values ^(a) Class GA H (WS)
	Sample Date	5/24/2010		5/26/2010		5/24/2010		5/24/2010		5/24/2010		5/26/2010		5/24/2010		5/24/2010		
	Sample Type	Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		Groundwater		
Aluminum	µg/L	49.6	B	20.3	B	84.8	B	18.6	B	43	B	37.7	B	35.6	B	22.8	B	---
Antimony	µg/L		U		U		U	6.7	B	8.6	B	6.4	B	7.8	B	5.5	B	3
Arsenic	µg/L		U		U	6.2	B		U		U		U	5.4	B	3.5	B	25
Barium	µg/L	201		193	B	120	B	117	B	346		352		208		193	B	1,000
Calcium	µg/L	137000		136000		130000		129000		445000		464000		140000		135000		---
Chromium	µg/L		U		U		U		U	1.3	B	1.1	B		U		U	50
Cobalt	µg/L		U		U		U	0.7	B		U		U	0.7	B		U	---
Copper	µg/L		U		U		U		U	5.3	B		U		U		U	200
Iron	µg/L	16500		16300		9370		9090		26100		26300		17000		16100		300
Magnesium	µg/L	21500		21300		19200		19000		35200		37300		22000		21200		35000 (g)
Manganese	µg/L	1180		1170		1250		1240		2310		2330		1210		1160		300
Nickel	µg/L	1.5	B	1.6	B	1.5	B	1.5	B	1.5	B	1.7	B	2.1	B	1.4	B	100
Potassium	µg/L	5550		5380		4640		4450		5400		5860		5660		5320		---
Selenium	µg/L	15.4	B		U		U		U		U		U		U		U	10
Sodium	µg/L	400000		392000		194000		190000		1910000		2020000		403000		385000		20,000
Vanadium	µg/L	0.91	B	0.76	B		U		U	0.95	B	1.1	B	0.77	B	1.1	B	---
Zinc	µg/L	25.5	B	20.1	B	17	B	17.1	B	16.2	B	19.3	B	24.7	B	20.9	B	2,000
(a) Division of Water Technical and Operational Guidance Series (1.1.1), June 1998																		
NOTE: USEPA = United States Environmental Protection Agency.																		
AWQS = Ambient Water Quality Standard.																		
H (WS) = Health (Water Source)																		
µg/L = Micrograms per liter.																		
B =																		
--- =																		
U = Less than Method Detection Limit.																		
Bold values indicate exceedence of standard																		

TABLE 3-22 VOLATILE COMPOUND DETECTIONS IN SURFACE WATER (LOW-FLOW)

VOLATILE ORGANIC COMPOUNDS																		
Parameter List (Detections Only) USEPA Method 8260B	Sample Location	SW-01		SW-02		SW-03		SW-04		SW-05		SW-06		SW-07		SW-DUP-01	AWQS and Guidance Values ^(a) Class B Stream A (C)	
	Sample Date	1/14/2010		1/14/2010		1/14/2010		1/14/2010		1/14/2010		1/14/2010		1/14/2010				
	Sample Type	Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		Surface Water				
1,2,4-Trimethylbenzene	µg/L		U		U		U		U		U		U	2.5	J	U	33	
Acetone	µg/L	5.9			U	6.6			U	5.7		5.4		U		U	---	
Benzene	µg/L	2.4	J		U		U		U		U		U		U	U	210	
Chloroethane	µg/L		U	1.8	J		U		U		U		U		U	U	---	
cis-1,2-Dichloroethene	µg/L		U	2.9	J		U	4.4	J	4.4	J	6.5		8.9		9.2	---	
m,p-Xylene	µg/L		U		U		U		U		U		U	3	J	U	65	
Naphthalene	µg/L		U		U		U		U		U		U	1	J	U	13	
o-Xylene	µg/L		U		U		U		U		U		U	1.2	J	U	65	
Toluene	µg/L		U		U		U		U		U		U	2.4	J	1.5	J	100
Trichloroethene	µg/L		U		U		U	2.3	J	2.1	J		U		U	U	---	
Vinyl chloride	µg/L		U	7.4			U		U		U	1.1	J	2.6	J	2.1	J	---
Xylene (Total)	µg/L		U		U		U		U		U		U	4.2	J	U	65	
SEMIVOLATILE ORGANIC COMPOUNDS																		
2-Methylnaphthalene	µg/L		U		U		U		U		U		U	1.3	J	U	4.7	
NOTE: USEPA = United States Environmental Protection Agency. AWQS = Ambient Water Quality Standard. A (C) = Aquatic (Chronic) µg/L = Micrograms per liter. U = Compound was analyzed for, but not detected. --- = J = Estimated Value. Bold values indicate exceedence of standard																		

TABLE 3-23 VOLATILE ORGANIC COMPOUND DETECTIONS IN SURFACE WATER (HIGH-FLOW)

Parameter List (Detections Only) USEPA Method 8260B	Sample Location	SW-01		SW-02		SW-03		SW-04		SW-05		SW-06		SW-07		SW-DUP-01		AWQS and Guidance Values ^(a) Class B Stream A (C)
	Sample Date	1/26/2010		1/26/2010		1/26/2010		1/26/2010		1/26/2010		1/26/2010		1/26/2010				
	Sample Type	Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		Surface Water				
cis-1,2-Dichloroethene	µg/L		U	2.6	J		U		U		U		U		U		U	---
m,p-Xylene	µg/L		U		U		U		U		U		U	1.1	J		U	65
Naphthalene	µg/L	4.2	J		U		U		U		U		U		U		U	13
Toluene	µg/L		U		U		U		U		U		U	1.7	J		U	100
Vinyl chloride	µg/L		U	3.1	J		U		U		U		U		U		U	---
Xylene (Total)	µg/L		U		U		U		U		U		U	1.1	J		U	65
(a) Division of Water Technical and Operational Guidance Series (1.1.1), June 1998																		
NOTE: USEPA = United States Environmental Protection Agency.																		
AWQS = Ambient Water Quality Standards																		
A (C) = Aquatic (Chronic)																		
µg/L = Micrograms per Liter.																		
U = Compound was analyzed for, but not detected.																		
J = Estimated Value.																		
--- =																		

TABLE 3-24 VOLATILE ORGANIC COMPOUND DETECTIONS IN SURFACE WATER MAY 2010

Parameter List (Detections Only) USEPA Method 8260	Sample Location	SW-08	SW-09	SW-10	AWQS and Guidance Values ^(a) Class B Stream A (C)	
	Sample Date	5/24/2010	5/24/2010	5/24/2010		
	Sample Type	Surface Water	Surface Water	Surface Water		
Acetone	µg/L	U	7.9	7	---	
Benzene	µg/L	U	5.4		U	210 (g)
Carbon disulfide	µg/L	U	1.7	J	5.6	---
Chloroethane	µg/L	U		U	3.5	J
Isopropylbenzene	µg/L	U	1.7	J		U
Methyl tert-butyl ether	µg/L	U	3.5	J		U
Toluene	µg/L	U		U	5.4	100 (g)
(a) Division of Water Technical and Operational Guidance Series (1.1.1), June 1998						
NOTE: USEPA = United States Environmental Protection Agency.						
AWQS = Ambient Water Quality Standards						
A (C) = Aquatic (Chronic)						
µg/L = Micrograms per Liter.						
U = Compound was analyzed for, but not detected.						
--- =						
J =						

TABLE 3-25 SEMIVOLATILE ORGANIC COMPOUND DETECTIONS IN SURFACE WATER MAY 2010

Parameter List (Detections Only) USEPA Method 8270	Sample Location	SW-08		SW-09		SW-10		AWQS and Guidance Values ^(a) Class B Stream A (C)
	Sample Date	5/24/2010		5/24/2010		5/24/2010		
	Sample Type	Surface Water		Surface Water		Surface Water		
Benzo(a)anthracene	µg/L		U		U	1.1	J	---
Benzo(b)fluoranthene	µg/L		U		U	1.7	J	---
Benzo(g,h,i)perylene	µg/L		U		U	1	J	---
Bis(2-ethylhexyl)phthalate	µg/L		U		U	2.8	J	0.6
Butylbenzylphthalate	µg/L		U		U	2.7	J	---
Chrysene	µg/L		U		U	2.9	J	---
Fluoranthene	µg/L		U		U	3.5	J	---
Phenanthrene	µg/L		U		U	1.5	J	5.0
Pyrene	µg/L		U		U	2.9	J	4.6
(a) Division of Water Technical and Operational Guidance Series (1.1.1), June 1998								
NOTE: USEPA = United States Environmental Protection Agency.								
AWQS = Ambient Water Quality Standards								
A (C) = Aquatic (Chronic)								
µg/L = Micrograms per Liter.								
U = Compound was analyzed for, but not detected.								
J =								
--- =								

TABLE 3-26 METAL DETECTIONS IN SURFACE WATER (LOW-FLOW)

Parameter List (Detections Only) USEPA Method 6010 & 7470	Sample Location	SW-01		SW-02		SW-03		SW-04		SW-05		SW-06		SW-07		SW-DUP-01		AWQS and Guidance Values ^(a) Class B Stream A (C)
	Sample Date	1/14/2010		1/14/2010		1/14/2010		1/14/2010		1/14/2010		1/14/2010		1/14/2010		1/14/2010		
	Sample Type	Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		
Aluminum	µg/L	695		193		26.5		23.6		14.6	J	32.2		458		72.4	J	100
Arsenic	µg/L	8.3			U		U	4.5	B		U		U		U	3.1		150
Barium	µg/L	294		218			U		U		U		U		U		U	---
Beryllium	µg/L		U		U		U		U		U		U		U		U	1,100
Cadmium	µg/L	0.91			U		U		U		U		U		U		U	*
Calcium	µg/L	202000		191000		224000		196000		190000		225000		220000		230000		---
Chromium	µg/L	12.2		19.7			U		U		U	0.84		1.9		0.66	B	*
Cobalt	µg/L		U		U		U		U		U		U		U		U	5
Copper	µg/L	53.1		48.5			U		U		U		U	30.9			U	*
Iron	µg/L	17100		10400		510		533		514		572		1420		571		300
Lead	µg/L	9.9		6.9		2.4			U		U	3.9		26.1		4		*
Magnesium	µg/L	29100		28000		44400		33200		32400		44400		43500		45200		---
Manganese	µg/L	4360		2510		166		162		158		146		166		153		---
Nickel	µg/L	20.3	B	16.4		2.4	B	3.7		2.1	J	3.9		4		3.6	J	*
Potassium	µg/L	6600		5390		3930		3550		3470		3810		3910		3960		---
Sodium	µg/L	216000		231000		369000		319000		314000		341000		406000		364000		---
Vanadium	µg/L		U		U		U		U		U		U		U		U	14
Zinc	µg/L	101			U		U		U		U	50.2		96.8		34.5	U	*
(a) Division of Water Technical and Operational Guidance Series (1.1.1), June 1998																		
NOTE: USEPA = United States Environmental Protection Agency.																		
AWQS = Ambient Water Quality Standards																		
A (C) = Aquatic (Chronic)																		
µg/L = Micrograms per Liter.																		
J = Reported value was obtained from a reading that was less than the Contract Required Quantitation Limit, but greater than or equivalent to the Method Detection Limit.																		
U = Reading was less than Method Detection Limit.																		

=																		
B =																		
Bold values indicate exceedance of standard.																		
* = Class A drinking water standards; see below for hardness-based standards																		
Hardness-based standards																		
Cadmium	µg/L	9		8		10		9		9		10		10		10		
Chromium	µg/L	332		318		383		333		325		384		377		390		
Copper	µg/L	43		41		50		43		42		50		49		51		
Lead	µg/L	26		24		31		26		25		31		30		31		
Nickel	µg/L	245		234		283		245		239		284		279		289		
Zinc	µg/L	392		375		454		393		383		455		447		463		

TABLE 3-27 METAL DETECTIONS IN SURFACE WATER (HIGH-FLOW)

Parameter List (Detections Only) USEPA Method 6010 & 7470	Sample Location	SW-01		SW-02		SW-03		SW-04		SW-05		SW-06		SW-07		SW-DUP-01		AWQS and Guidance Values ^(a) Class B Stream A (C)
	Sample Date	1/26/2010		1/26/2010		1/26/2010		1/26/2010		1/26/2010		1/26/2010		1/26/2010		1/26/2010		
	Sample Type	Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		
Aluminum	µg/L	242			U		U	442		472		203			U	473		100
Antimony	µg/L			4.8			U		U		U		U		U		U	---
Arsenic	µg/L		U		U		U		U		U		U	3.6			U	150
Barium	µg/L	84.3		107		94.8		59.2		58.6		92.9		95		58		---
Calcium	µg/L	135000		139000		168000		71800		68800		169000		170000		68700		---
Chromium	µg/L	8		10.7		1.6		1.4		1.6		2.9		3.1		1.5		*
Cobalt	µg/L	1		1.1			U		U		U		U	0.81		0.76		5
Copper	µg/L		U		U		U		U		U		U		U	7.8		*
Iron	µg/L	2670		2610		608		1200		1260		837		856		1260		300
Lead	µg/L		U		U	3.1	B		U		U	6.9		9.3			U	*
Magnesium	µg/L	16100	J	19900	J	32200	J	14200	J	13800	J	32900	J	33000	J	13800	J	---
Manganese	µg/L	319		1030		214		204		223		236		213		196		---
Nickel	µg/L	47.2		28.2		6		2.4		2.4		5.9		6		2.1		*
Potassium	µg/L	3230		3510		3980		3210		3110		3930		3980		3110		---
Sodium	µg/L	331000		228000		401000		172000		166000		348000		355000		162000		---
Vanadium	µg/L		U		U		U		U		U		U	1.4	U		U	14
Zinc	µg/L	133		54.5			U		U		U	60.8		53.5			U	*
(a) Division of Water Technical and Operational Guidance Series (1.1.1), June 1998																		
NOTE: USEPA = United States Environmental Protection Agency.																		
AWQS = Ambient Water Quality Standards																		
A (C) = Aquatic (Chronic)																		
µg/L = Micrograms per Liter.																		
U = Reading was less than Method Detection Limit.																		
--- =																		
B =																		
J = Reported value was obtained from a reading that was less than the Contract Required Quantitation Limit, but greater than or equivalent to the Method Detection Limit.																		
Bold values indicate exceedance of standard.																		
* = Class A drinking water standards; see below for hardness-based standards																		
Hardness-based standards																		
Chromium	µg/L	232		244		300		151		146		303		304		146		
Copper	µg/L	29		31		39		19		18		39		39		18		
Lead	µg/L	17		18		23		10		9		23		23		9		
Nickel	µg/L	169		178		221		108		105		222		223		105		
Zinc	µg/L	270		285		353		173		167		356		358		167		

TABLE 3-28 METAL DETECTIONS IN SURFACE WATER MAY 2010

Parameter List (Detections Only) USEPA Method 6010 & 7470	Sample Location	SW-08		SW-09		SW-10		AWQS and Guidance Values ^(a) Class B Stream A (C)
	Sample Date	5/24/2010		5/24/2010		5/24/2010		
	Sample Type	Surface Water		Surface Water		Surface Water		
Aluminum	µg/L	39.8	B	21200		5790		100
Arsenic	µg/L		U	107		14.8	B	150
Barium	µg/L	339		1990		345		---
Beryllium	µg/L		U	1.8	B	0.31	B	1100
Cadmium	µg/L		U	6.6		7.7		*
Calcium	µg/L	285000		363000		305000		---
Chromium	µg/L	0.56	B	2330		538		*
Cobalt	µg/L	0.95	B	11.7	B	11.1	B	5
Copper	µg/L		U	1320		461		*
Iron	µg/L	12000		191000		39600		300
Lead	µg/L		U	758		154		*
Magnesium	µg/L	39900		52200		42200		---
Manganese	µg/L	2310		4160		2630		---
Mercury	µg/L		U	1.6			U	0.77
Nickel	µg/L	1.4	B	622		268		*
Potassium	µg/L	4830		7130		7310		---
Silver	µg/L		U	2.6	B	14.4	B	0.1
Sodium	µg/L	879000		161000		286000		---
Vanadium	µg/L		U	87.8		23.2	B	14
Zinc	µg/L	25	B	1840		747		*
(a) Division of Water Technical and Operational Guidance Series (1.1.1), June 1998								
NOTE: USEPA = United States Environmental Protection Agency.								
AWQS = Ambient Water Quality Standards								
A (C) = Aquatic (Chronic)								
µg/L = Micrograms per Liter.								
U = Reading was less than Method Detection Limit.								
--- =								
B =								
J = Reported value was obtained from a reading that was less than the Contract Required Quantitation Limit, but greater than or equivalent to the Method Detection Limit.								
Bold values indicate exceedance of standard.								
* = Class A drinking water standards; see below for hardness-based standards								
Hardness-based standards								
Cadmium	µg/L	21		25		22		
Chromium	µg/L	438		537		463		
Copper	µg/L	57		71		61		
Lead	µg/L	36		46		38		
Nickel	µg/L	326		402		345		
Zinc	µg/L	523		645		553		

TABLE 3-29 POLYCHLORINATED BIPHENYL DETECTIONS IN SURFACE WATER (HIGH-FLOW)

Parameter List (Detections Only) USEPA Method 8082	Sample Location	SW-01		SW-02		SW-03		SW-04		SW-05		SW-06		SW-07		SW-DUP-01		AWQS and Guidance Values ^(a) Class B Stream H (FC)
	Sample Date	1/26/2010		1/26/2010		1/26/2010		1/26/2010		1/26/2010		1/26/2010		1/26/2010		1/26/2010		
	Sample Type	Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		
Aroclor-1248	µg/L	3.1			3.1				U			U	1.1				U	1.00E-06
(a) Division of Water Technical and Operational Guidance Series (1.1.1), June 1998																		
NOTE: USEPA = United States Environmental Protection Agency																		
AWQS = Ambient Water Quality Standard.																		
H (FC) = Human (Fish Consumption)																		
µg/L = Micrograms per Liter.																		
U = Compound was analyzed for, but not detected.																		
Bold values indicate exceedence of standard.																		

TABLE 3-30 POLYCHLORINATED BIPHENYL DETECTIONS IN SURFACE WATER MAY 2010

Parameter List (Detections Only) USEPA Method 8082	Sample Location	SW-08	SW-09	SW-10	AWQS and Guidance Values ^(a) Class B Stream A (C)
	Sample Date	5/24/2010	5/24/2010	5/24/2010	
	Sample Type	Surface Water	Surface Water	Surface Water	
Aroclor-1248	µg/L	U	110	6.1	---
Aroclor-1254	µg/L	U	36	2.5	---
Total			146	8.6	1.00E-06
(a) Division of Water Technical and Operational Guidance Series (1.1.1), June 1998					
NOTE: USEPA = United States Environmental Protection Agency					
AWQS = Ambient Water Quality Standard.					
A (C) = Aquatic (Chronic)					
µg/L = Micrograms per Liter.					
U = Compound was analyzed for, but not detected.					
--- =					
Bold values indicate exceedence of standard.					

TABLE 3-31 PESTICIDE DETECTIONS IN SURFACE WATER MAY 2010

Parameter List (Detections Only) USEPA Method 8081	Sample Location	SW-08	SW-09		SW-10		AWQS and Guidance Values ^(a) Class B Stream H (FC)	
	Sample Date	5/24/2010	5/24/2010		5/24/2010			
	Sample Type	Surface Water	Surface Water		Surface Water			
4,4'-DDD	µg/L		U	0.1			U	0.00008
4,4'-DDE	µg/L		U	0.16			U	0.000007
4,4'-DDT	µg/L		U	0.15			U	0.00001
Aldrin	µg/L		U		U	0.23		0.001
delta-BHC	µg/L		U	0.66		0.5		---
Endosulfan sulfate	µg/L		U		U	0.14		---
gamma-BHC (Lindane)	µg/L		U		U	0.055		---
gamma-Chlordane	µg/L		U		U	0.43		---
Heptachlor	µg/L		U	0.075		0.075		0.0002
Heptachlor epoxide	µg/L		U	0.52			U	0.0003

(a) Division of Water Technical and Operational Guidance Series (1.1.1), June 1998

NOTE: USEPA = United States Environmental Protection Agency

AWQS = Ambient Water Quality Standard.

H (FC) = Human (Fish Consumption)

µg/L = Micrograms per Liter.

4,4'-DDD = 4,4'-Dichlorodiphenyldichloroethane

U = Compound was analyzed for, but not detected.

4,4'-DDE = 4,4'-Dichlorodiphenyldichloroethylene

4,4'-DDT = 4,4'-Dichlorodiphenyltrichloroethane

Bold values indicate exceedence of standard.

TABLE 4-1 ENVIRONMENTAL FATE AND TRANSPORT PARAMETERS FOR CHEMICALS OF
CONCERN^(a)

Analyte	Water Solubility (mg/L)	Vapor Pressure (mm Hg)	Henry's Law Constant (atm-m ³ /mol)	Kow (L/kg)	Koc (L/kg)
POLYCHLORINATED BIPHENYLS					
Polychlorinated Biphenyls	5.55E-02	7.60E-05	1.75E-02	2.00E+06	5.30E+05
PESTICIDES					
gamma-Chlordane ^(b)	2.28E-01	4.17E-06	4.11E-03	9.25E+06	3.93E+05
4,4-DDD ^(b)	9.00E-02	8.66E-07	1.70E-04	7.47E+05	8.51E+04
4,4-DDE ^(b)	6.50E-02	5.66E-06	8.73E-04	9.90E+05	1.10E+04
4,4-DDT ^(b)	3.10E-03	3.93E-07	2.20E-03	6.23E+06	1.37E+05
Delta BHC ^(b)	2.59E+00	2.87E-05	1.80E-04	1.00E+04	8.51E+03
Dieldrin ^(b)	1.95E-01	9.96E-07	1.10E-04	2.80E+05	2.14E+04
Endosulfan Sulfate ^(b)	1.00E-01	1.62E-07	3.65E-05	1.02E+06	7.94E+05
Endosulfan I ^(b)	1.73E+00	2.75E-06	3.55E-05	1.58E+05	1.57E+04
Gamma BHC ^(b)	5.75E+00	3.72E-05	1.40E-04	1.81E+04	1.10E+03
Heptachlor ^(b)	1.80E-01	3.26E-04	2.44E-02	1.61E+06	1.17E+04
Heptachlor Epoxide ^(b)	2.75E-01	4.34E-06	3.40E-04	8.04E+04	7.25E+03
SEMIVOLATILE ORGANIC CHEMICALS					
Benzo(a)anthracene ^(b)	1.00E-02	1.54E-07	1.40E-04	3.32E+05	3.55E+05
Benzo(a)pyrene ^(b)	1.62E-03	4.89E-09	4.70E-05	1.29E+06	9.55E+05
Benzo(b)fluoranthene ^(b)	1.50E-03	8.06E-08	5.00E-04	1.26E+06	1.20E+06
Benzo(k)fluoranthene ^(b)	5.50E-04	9.59E-11	4.45E-07	1.29E+06	1.23E+06
Chrysene ^(b)	2.00E-03	7.80E-09	5.03E-05	3.32E+05	3.09E+05
Dibenz(a,h)anthracene ^(b)	5.00E-04	2.11E-11	4.66E-07	4.98E+06	1.91E+06
Fluorene ^(b)	1.98E+00	3.20E-03	2.60E-03	1.04E+04	7.59E+03
Phenanthrene ^(b)	9.94E-01	6.80E-04	5.40E-03	2.21E+04	1.41E+04
Indeno(1,2,3-cd)pyrene ^(b)	3.80E-03	1.40E-10	2.85E-06	4.98E+06	3.47E+06
NON-CHLORINATED ALKENE					
Acetone ^(b)	6.00E+05	2.27E+02	1.60E-03	5.82E-01	5.70E-01
METALS					
Antimony ^(b)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.50E+01
Arsenic ^(b)	0.00E+00	0.00E+00	0.00E+00	4.78E+00	2.51E+01
Cadmium ^(b)	0.00E+00	0.00E+00	0.00E+00	8.49E-01	1.51E+01
Copper ^(b)	0.00E+00	0.00E+00	0.00E+00	2.69E-01	3.98E+01
Iron ^(b)	0.00E+00	0.00E+00	0.00E+00	NA	NA
Lead ^(b)	0.00E+00	0.00E+00	0.00E+00	5.36E+00	1.00E+01
Magnesium ^(b)	0.00E+00	0.00E+00	0.00E+00	NA	NA
Manganese ^(b)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.01E+01
Mercury ^(b)	3.00E-02	1.30E-03	4.74E-01	3.38E-01	4.00E-02
Nickel ^(b)	0.00E+00	0.00E+00	0.00E+00	2.69E-01	1.58E+01
Silver ^(b)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-01
Sodium ^(b)	NA	0.00E+00	0.00E+00	NA	NA
Zinc ^(b)	0.00E+00	0.00E+00	0.00E+00	3.38E-01	1.58E+01
(a) Adapted from: USEPA. 1996. <i>Soil Screening Guidance: Technical Background Document</i> , Office of Emergency and Remedial Response, Washington, D.C., EPA/540/R95/128					
(b) GSI Environmental, 2009. GSI Chemical Properties Database.					
NOTE: 4,4'-DDD = 4,4'-Dichlorodiphenyldichloroethane					
4,4'-DDE = 4,4'-Dichlorodiphenyldichloroethylene					
4,4'-DDT = 4,4'-Dichlorodiphenyltrichloroethane					

TABLE 5-1 HUMAN HEALTH CONTAMINANTS OF CONCERN

Contaminants of Concern			
Medium	Pesticides/Polychlorinated Biphenyls	Semivolatile Organic Chemicals	Metals
Surface Soil, Subsurface Soil, and Sediment (Onsite)	gamma-Chlordane, 4,4-Dichlorodiphenyldichloroethane, 4,4-Dichlorodiphenyldichloroethylene, 4,4-Dichlorodiphenyltrichloroethane, Delta BHC, Dieldrin, Endosulfan Sulfate, Endosulfan I, Gamma BHC, Heptachlor, Heptachlor Epoxide, Polychlorinated Biphenyls	Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenzo(a,h)anthracene, Fluorene, Phenanthrene, Indeno(1,2,3-cd)pyrene	Antimony, Arsenic, Cadmium, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Silver, Sodium, Zinc
Surface Water	Aldrin, Delta-bhc, Endosulfan Sulfate, gamma-Chlordane, Heptachlor, Heptachlor Epoxide, 4,4-Dichlorodiphenyldichloroethane, 4,4-Dichlorodiphenyldichloroethylene, 4,4-Dichlorodiphenyltrichloroethane	Phenol, 4-methylphenol, Phenanthrene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(g,h,i)perylene	Aluminum, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Nickel, Vanadium
Groundwater			Antimony, Iron, Magnesium, Manganese, Selenium, and Sodium

TABLE 5-2 EXPOSURE MATRIX

Media		Surface and Subsurface Soil/Sediment/Surface Water/Groundwater		Soil Particulate	Ambient Air
Potential Exposure		Ingestion	Dermal Contact	Inhalation	Inhalation
Scenario	Receptor				
Onsite	Trespassers - C	Minimal	Minimal	None	None
	Adult Commercial Workers - F	Minimal	Minimal	None	None
	Adult and Child Visitors - F	Minimal	Minimal	None	None
	Adult and Child Residents F	Minimal	Minimal	Minimal	None
	Adult Construction Workers - F	Minimal	Minimal	Minimal	None
Offsite	Adult Commercial and Industrial Workers - C, F	Minimal	Minimal	Minimal	None
	Adult and Child Visitors - C, F	Minimal	Minimal	Minimal	None
	Adult Construction Workers - C, F	Minimal	Minimal	Minimal	None
	Adult Nearby Utility Workers - C, F	Minimal	Minimal	Minimal	None
NOTE: C = Potential Current Exposure F = Potential Future Exposure, no Remedial Action					

TABLE 6-1 FISH AND WILDLIFE RESOURCES IMPACT ANALYSIS DECISION KEY

	Yes	No
1) Is the site or area of concern a discharge or spill event?		x
2) Is the site or area of concern a point source of contamination to the groundwater which will be prevented from discharging to surface water? Soil contamination is not widespread, or if widespread, is confined under buildings and paved areas?		x
3) Is the site and all adjacent property a developed area with buildings, paved surfaces and little or no vegetation?		x
4) Does the site contain habitat of an endangered, threatened, or special concern species?		x
5) Has the contamination gone off-site?	x	
6) Is there any discharge or erosion of contamination or the potential for discharge or erosion of contamination?	x	
7) Are the site contaminants PCBs, pesticides, or other persistent, bioaccumulable substances?	x	
8) Does contamination exist at concentrations that could exceed SCGs or be toxic to aquatic life if discharged to surface water?	x	
9) Does the site or any adjacent or downgradient property contain any of the following resources?		
a. Any endangered, threatenend, or special concern species or rare plants or their habitats		x
b. Any NYSDEC designated significant habitats or rare NYS ecological communities		x
c. Tidal or freshwater wetlands	x	
d. Streams, creeks, or river	x	
e. Pond, lake, or lagoon		x
f. Drainage ditch or channel	x	
g. Other surface water features		x
h. Other marine or freshwater habitats	x	
i. Forest		x
j. Grassland or grassy field		x
k. Parkland or woodland	x	
l. Shrubby area	x	
m. Urban wildlife habitat	x	
n. Other terrestrial habitat	x	
10) Is the lack of resources due to contamination?		x
11) Is the contamination a localized source which has not migrated from the source to impact any on-site or off-site resources?		x
12) Does the site have widespread soil contamination that is not confined under and around buildings or paved areas?	x	
13) Does the contamination at the site or area of concern have the potential to migrate to, erode into or otherwise impact any on-site or off-site habitat of endangered, threatened, or special concern species or other fish and wildlife resources?	x	
14) Fish and wildlife resources impact analysis needed?	x	

TABLE 7-1 SUMMARY OF DEGREE OF IMPACT FROM CONTAMINANTS OF CONCERN AT OLD LEY CREEK CHANNEL

Sediment	Contaminants of Concern	Concentration Range Detected (ppm) ^(a)	SCG ^(b) (ppm) ^(a)	Frequency of Exceeding SCG
VOCs	Vinyl Chloride	3.8-4.7	0.06	3/14
SVOCs	Benzo(a)anthracene	0.16-15	2.5	9/14
	Benzo(a)pyrene	0.18-12	0.27	13/14
	Fluorene	0.049-3.5	1.7	2/14
	Phenanthrene	0.17-26	25	1/14
	Phenol	0-0.12	0.1	1/14
Pesticides	4,4'-DDD	0.0055-0.16	0.002	6/14
	4,4'-DDE	0.0045-0.28	0.002	7/14
	4,4'-DDT	0.069-0.41	0.002	13/14
	delta-BHC	0.01-0.031	0.013	1/14
	Endosulfan I	0.0-0.013	0.007	1/14
	gamma-BHC (Lindane)	0.0031-0.33	0.013	6/14
	gamma-Chlordane	0.013-0.44	0.005	12/14
	Heptachlor	0.028-0.66	0.02	10/14
PCBs	Total Aroclor	1.97-64.3	4	10/14
Metals	Arsenic	2.6-12.7	6.0-33.0	7/14
	Cadmium	0.31-7.7	0.6-9.0	9/14
	Chromium	21.7-912	26-110	13/14
	Copper	49.6-850	16-110	14/14
	Iron	7740-39200	2%-4%	6/14
	Lead	13.7-489	31-110	11/14
	Manganese	147-552	460-1100	2/14
	Mercury	0.01-0.56	0.15-1.3	5/14
	Nickel	9.7-312	16-50	11/14
	Silver	0.24-10.3	1-2.2	4/14
	Zinc	34.8-2690	120-270	9/14

(a) ppm = parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil

(b) Technical Guidance for Screening Contaminated Sediments

NOTE: ppm = Parts per million

SCG = Standards, Criteria, and Guidance.

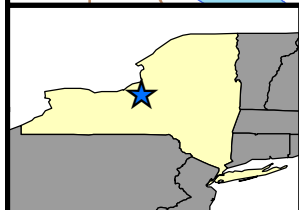
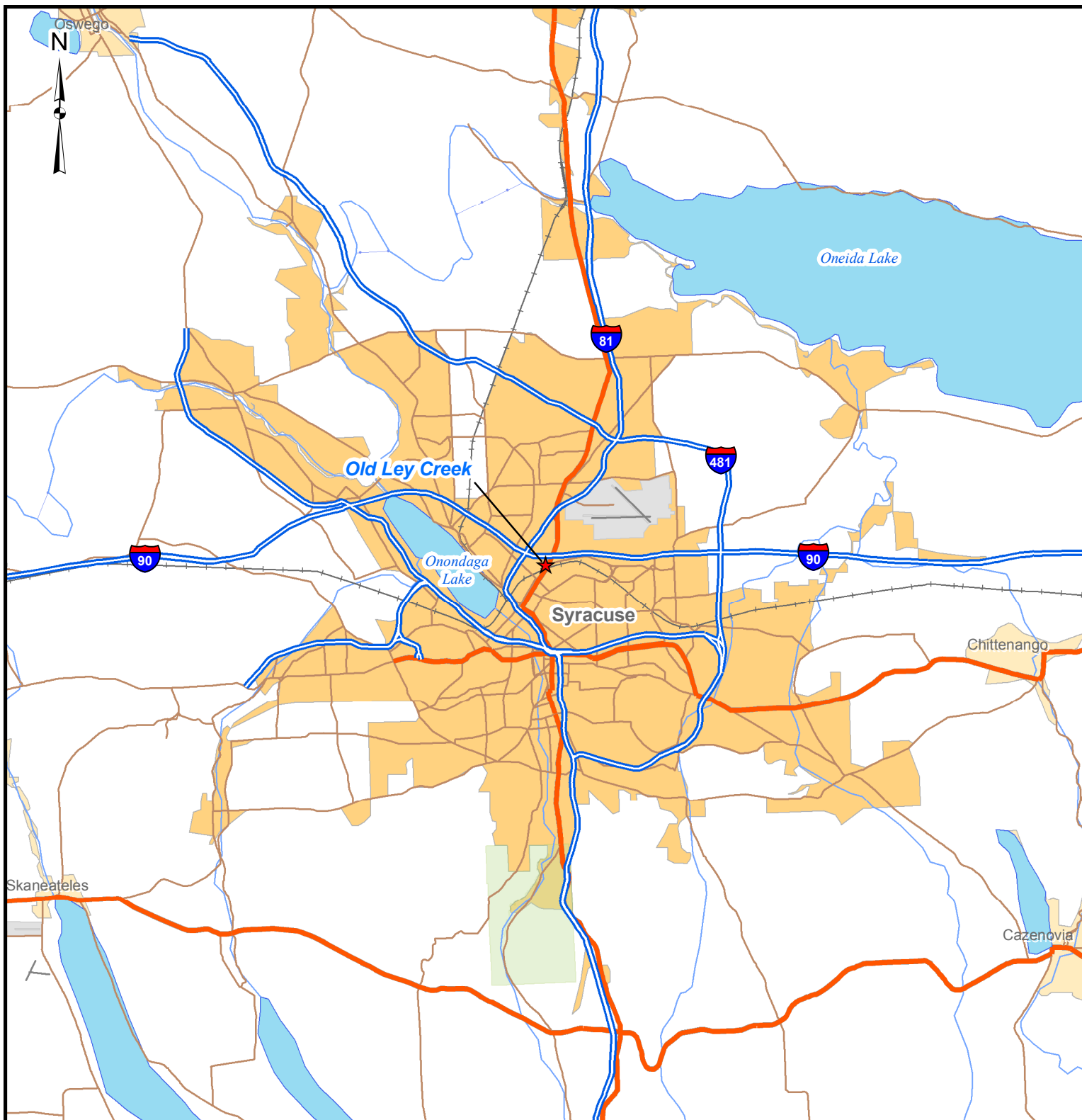
VOC = Volatile Organic Compound

SVOC = Semivolatile Organic Compound

4,4'-DDD = 4,4'-Dichlorodiphenyldichloroethane

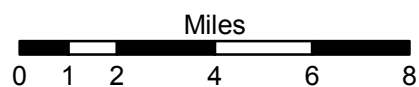
4,4'-DDE = 4,4'-Dichlorodiphenyldichloroethylene

4,4'-DDT = 4,4'-Dichlorodiphenyltrichloroethane



Legend

★ Old Ley Creek



Source: ESRI Streetmaps (2005).



Old Ley Creek Channel Remedial Investigation
(Site No. 7-34-074)
Town of Salina, New York

FIGURE 1-1
SITE LOCATION

PROJECT MGR:
SLG

DESIGNED BY:
CJS

CREATED BY:
CJS

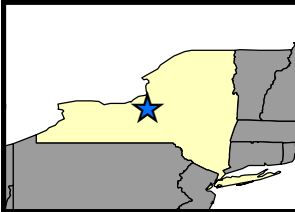
CHECKED BY:
SLG

SCALE:
AS SHOWN

DATE:
JULY 2010

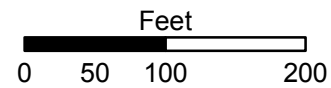
PROJECT NO:
14638.42

FILE NO:
GIS\FIGURES\1436842
LeyCreek_Figure_1.MXD



Legend

 Site Boundary



Source: NY_CENTRAL_2006_1FT_NC (NYS Office of Cyber Security and Critical Infrastructure Coordination [CSCIC])



Old Ley Creek Channel Remedial Investigation Site (Site No. 7-34-074)
Town of Salina, New York

FIGURE 1-2
Site Map

PROJECT MGR:
SLG

DESIGNED BY:
CJS

CREATED BY:
CJS

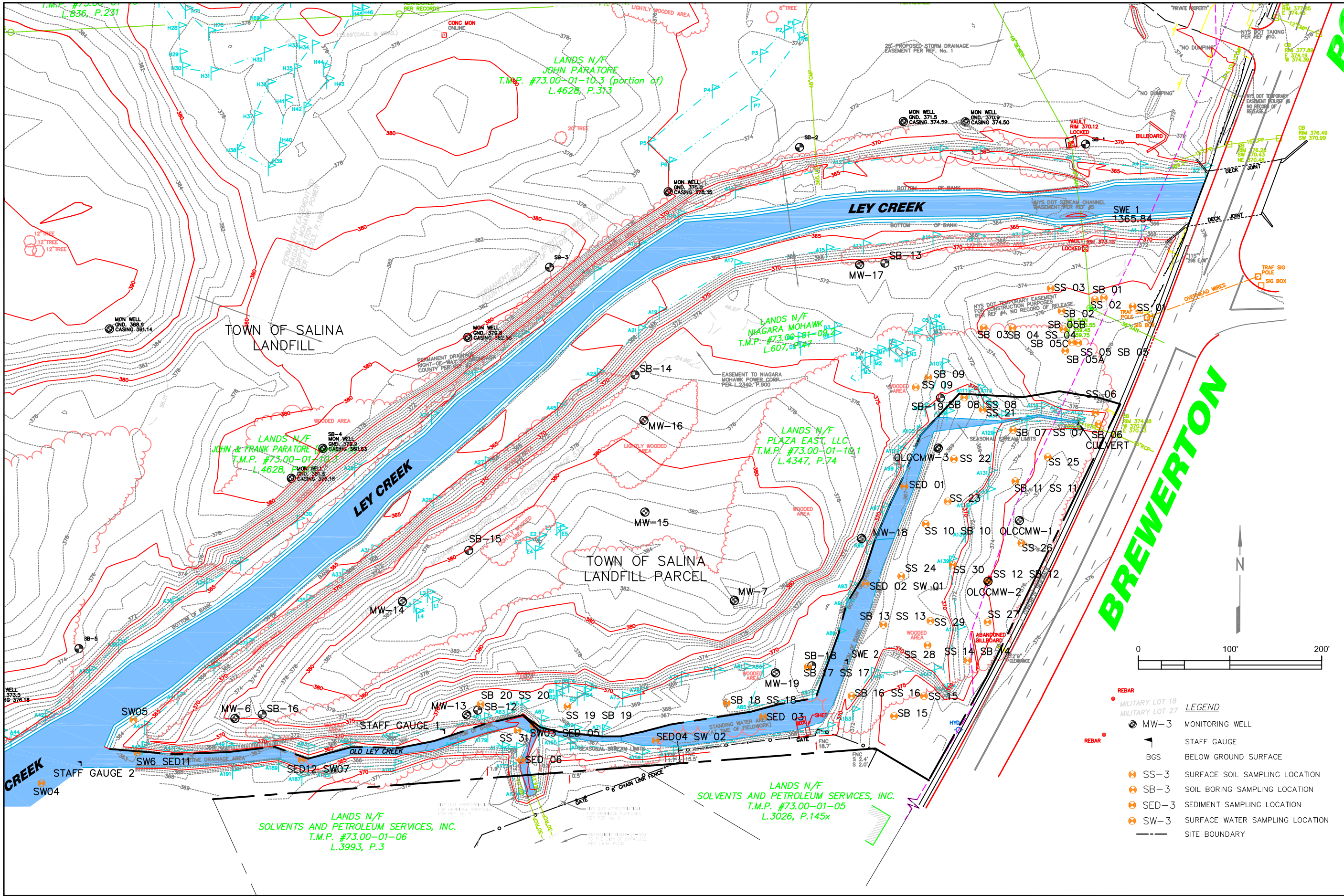
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CJS


SCALE:
AS SHOWN

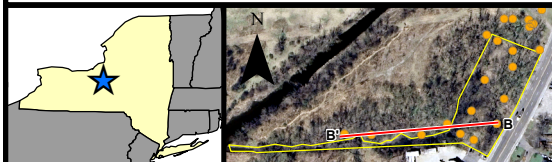
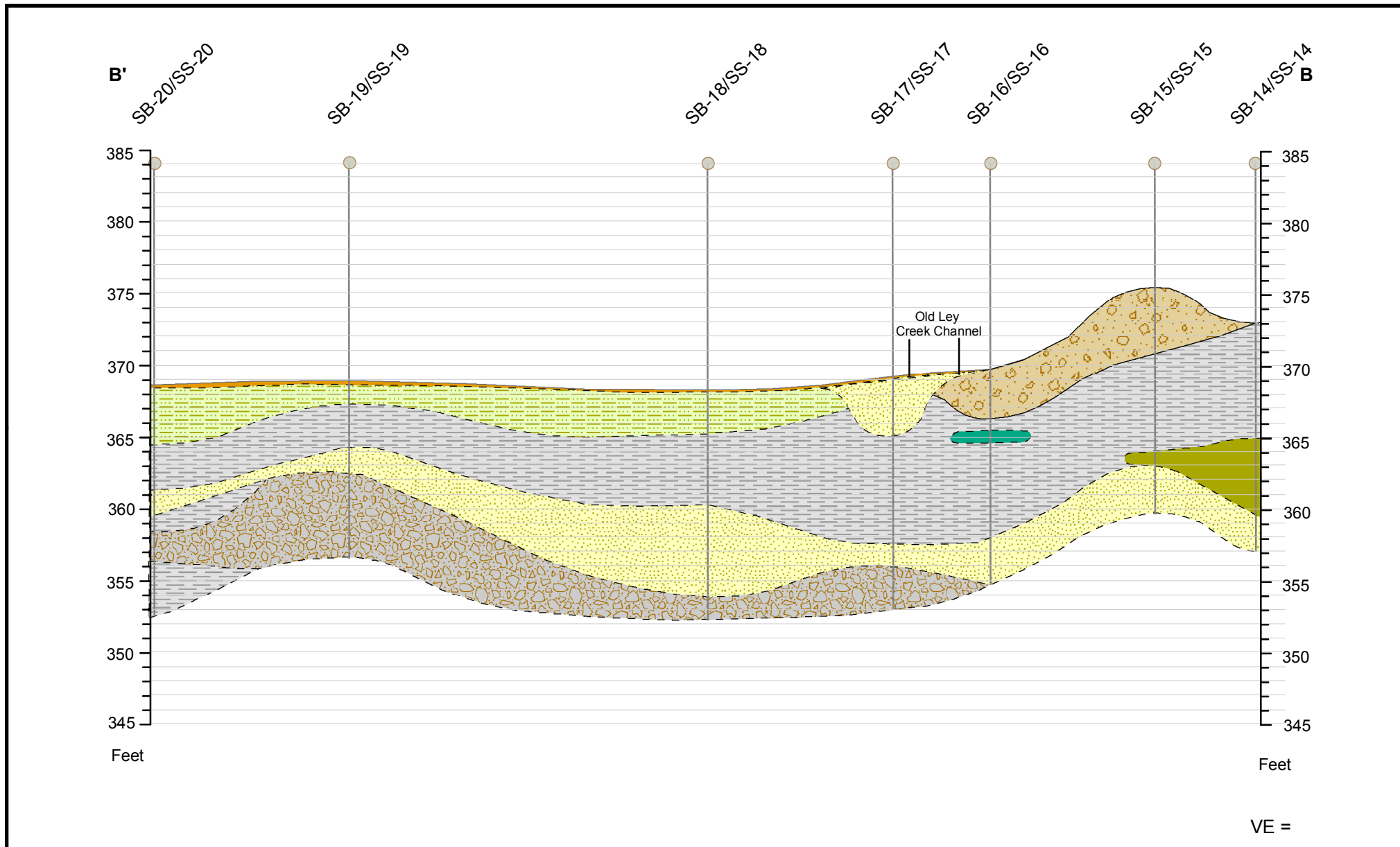
DATE:
JULY 2010

PROJECT NO:
14638.42

FILE NO:
GIS\FIGURES\1436842
_LeyCreek_Figure_2.MXD



 <div>PREPARED BY: EA ENGINEERING, P.C. AND ITS AFFILIATE EA SCIENCE AND TECHNOLOGY</div>				Old Ley Creek Channel (Site No. 7-34-074) Remedial Investigation TOWN OF SALINA, NEW YORK				FIGURE 2-1 MONITORING WELL AND SAMPLE LOCATION MAP			
PROJECT MGR.	DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE	PROJECT NO.	FILE NAME	DRAWING NO.	FIGURE		
SLG	SLG	DW	SLG	JULY 2010	AS SHOWN	1436842	LocationMap	1 OF 1	FIGURE 2-1		



Legend

- | | | |
|-------------------|----------------|---------------|
| Top Soil | Silt and Clay | Silt and Sand |
| Fill Material | Creek Deposits | Till |
| Silt and Organics | Peat | |

0 20 40 60 80 100
Feet



Old Ley Creek Channel Remedial Investigation (Site No. 7-34-074)
Town of Salina, New York

FIGURE 3-2
WEST-EAST
GEOLOGICAL CROSS SECTION

PROJECT MGR:
SLG

DESIGNED BY:
JCP

CREATED BY:
JCP

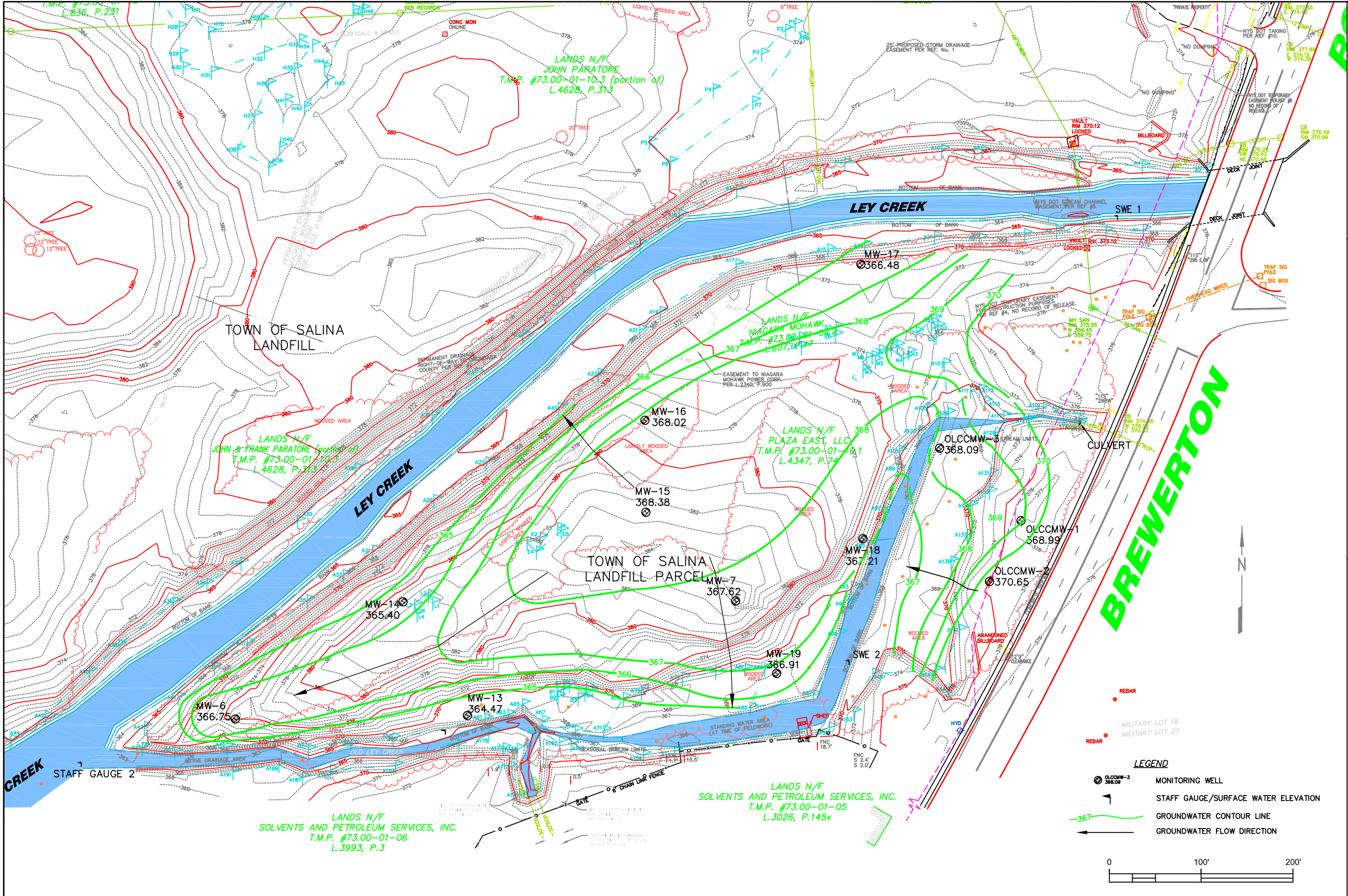
CHECKED BY:
SLG

SCALE:
AS SHOWN

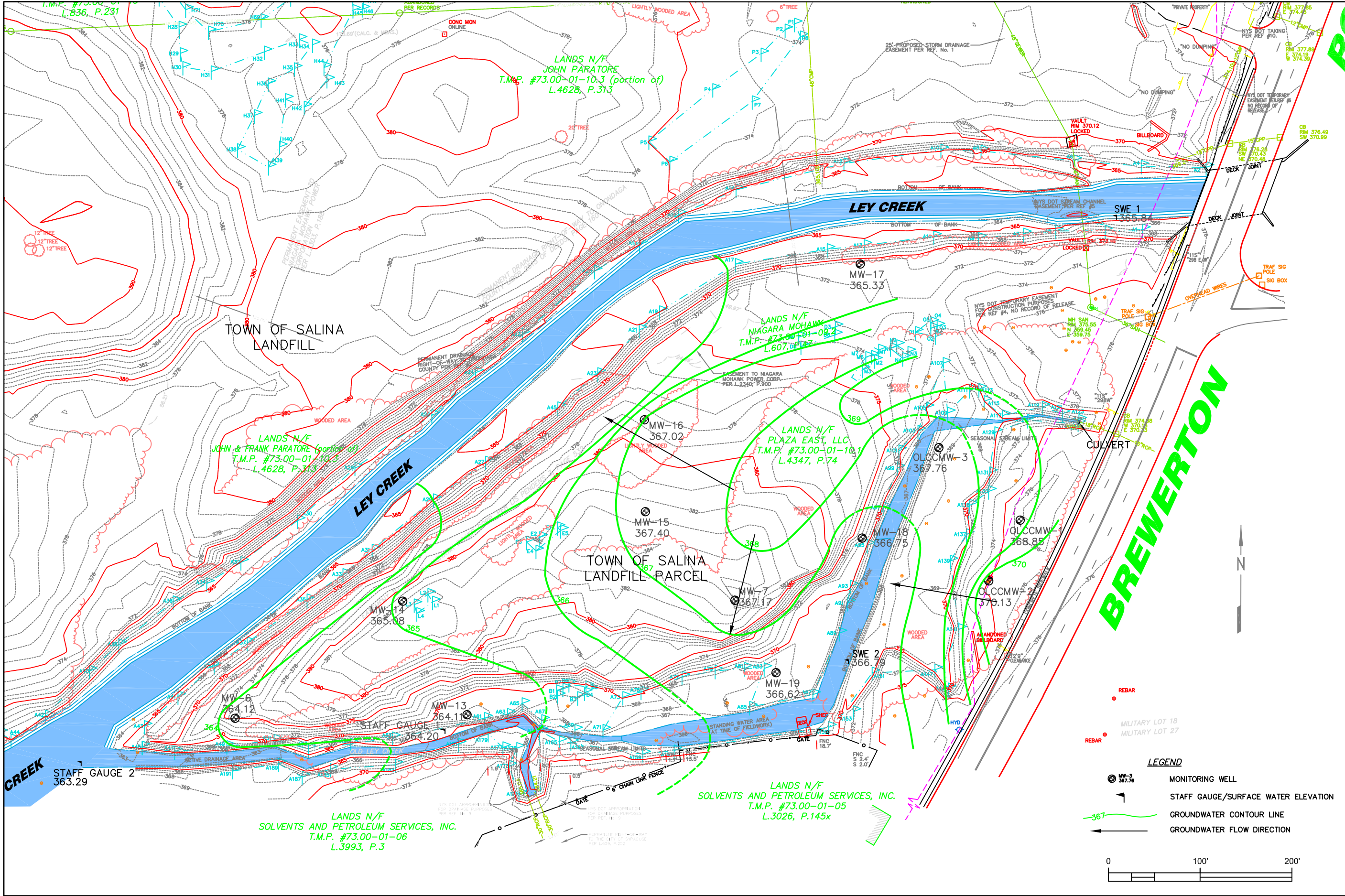
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JULY 2010


PROJECT NO:
14368.42

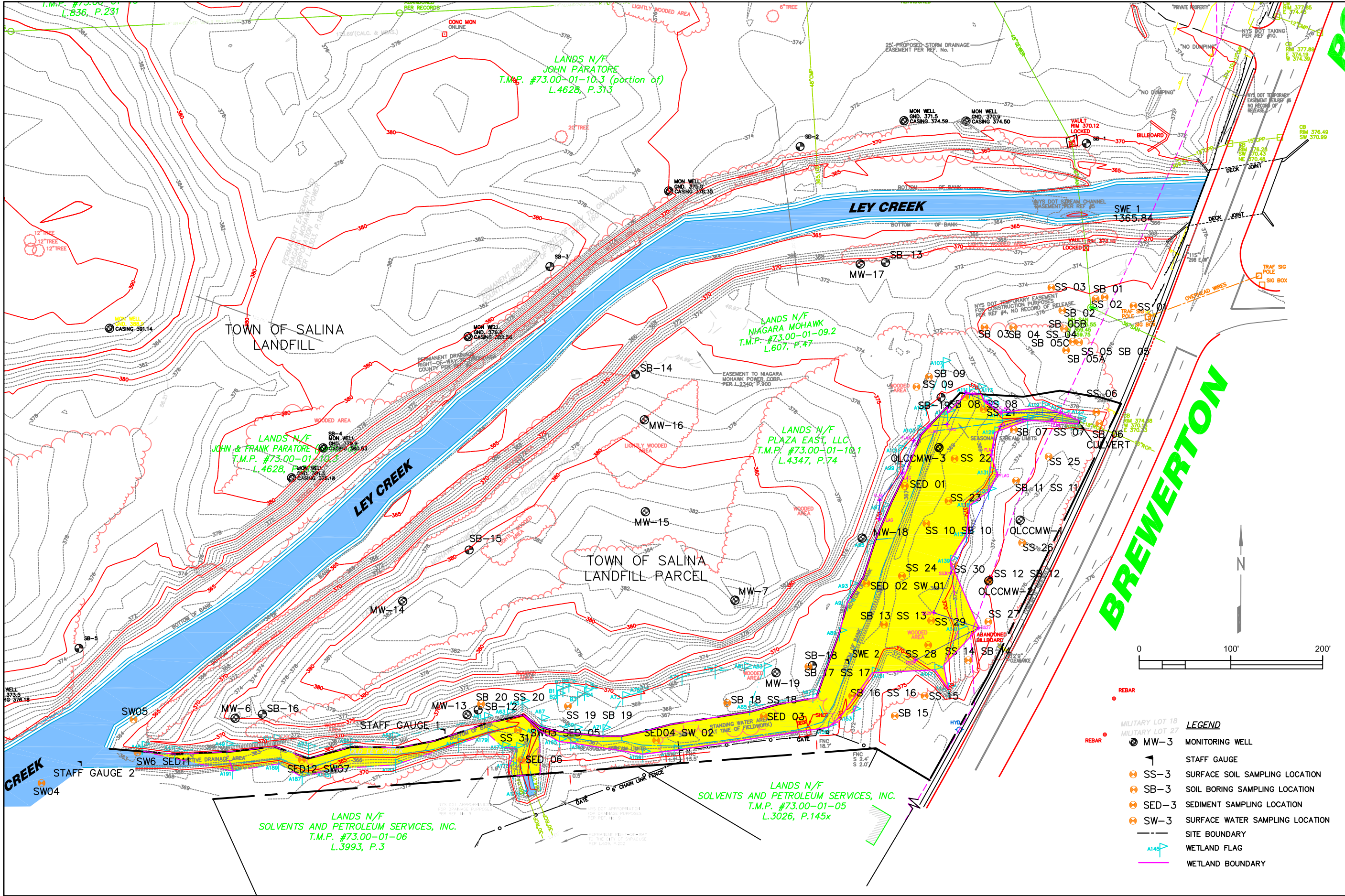
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Inv_Des\1436842_Old Ley Creek\GIS\FIGURES



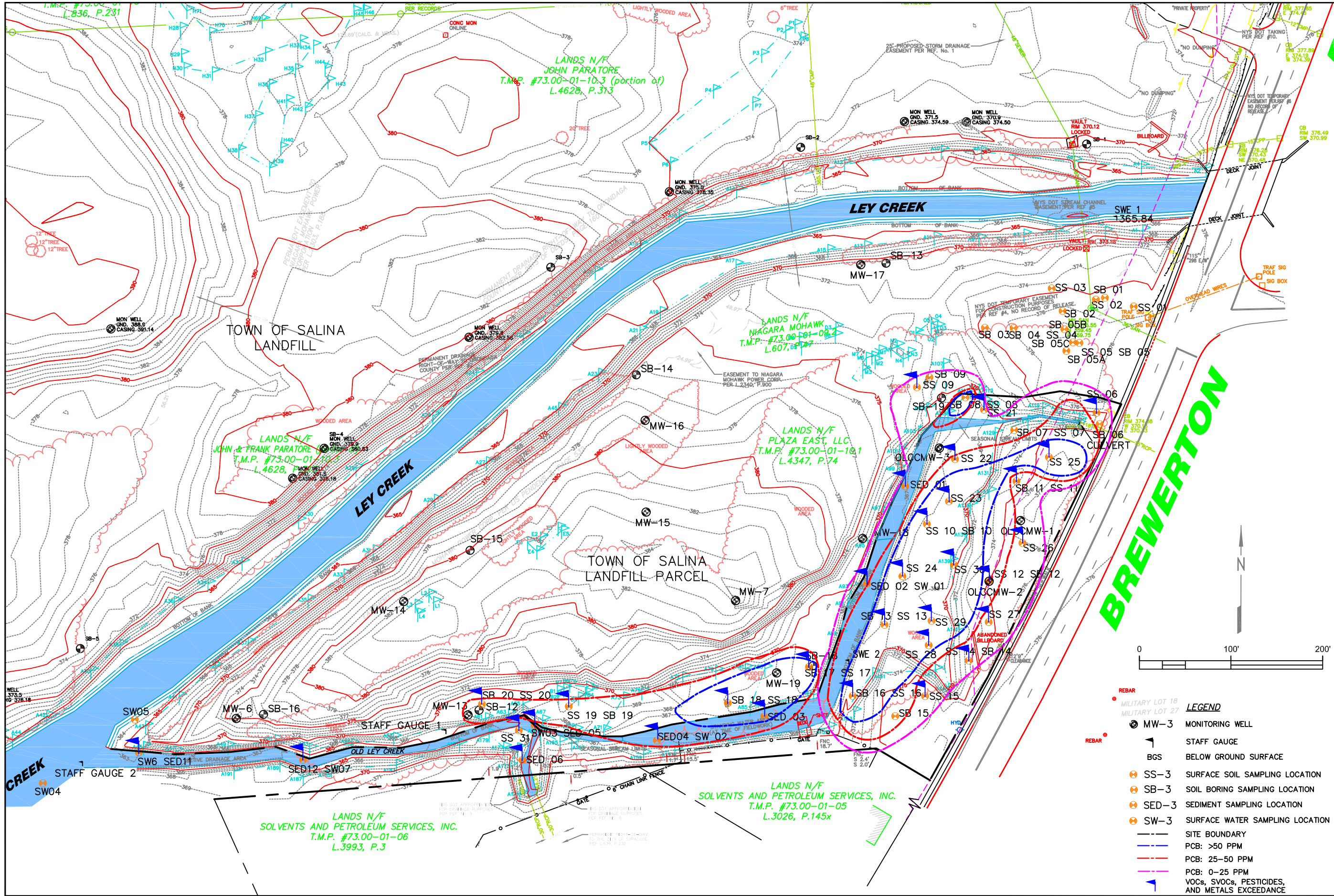
PREPARED BY: EA ENGINEERING, P.C. AND ITS AFFILIATE EA SCIENCE AND TECHNOLOGY	Old Ley Creek Channel (Site No. 7-34-074) Remedial Investigation TOWN OF SALINA, NEW YORK			FIGURE 3-3 GROUNDWATER CONTOUR MAP (10 MAY 2010)		
	PROJECT MGR. SLG	DESIGNED BY SLG	DRAWN BY DW	CHECKED BY SLG	DATE JULY 2010	SCALE AS SHOWN
			PROJECT NO. 1436842	FILE NAME GWContours	DRAWING NO. 1 OF 1	FIGURE FIGURE 3-3



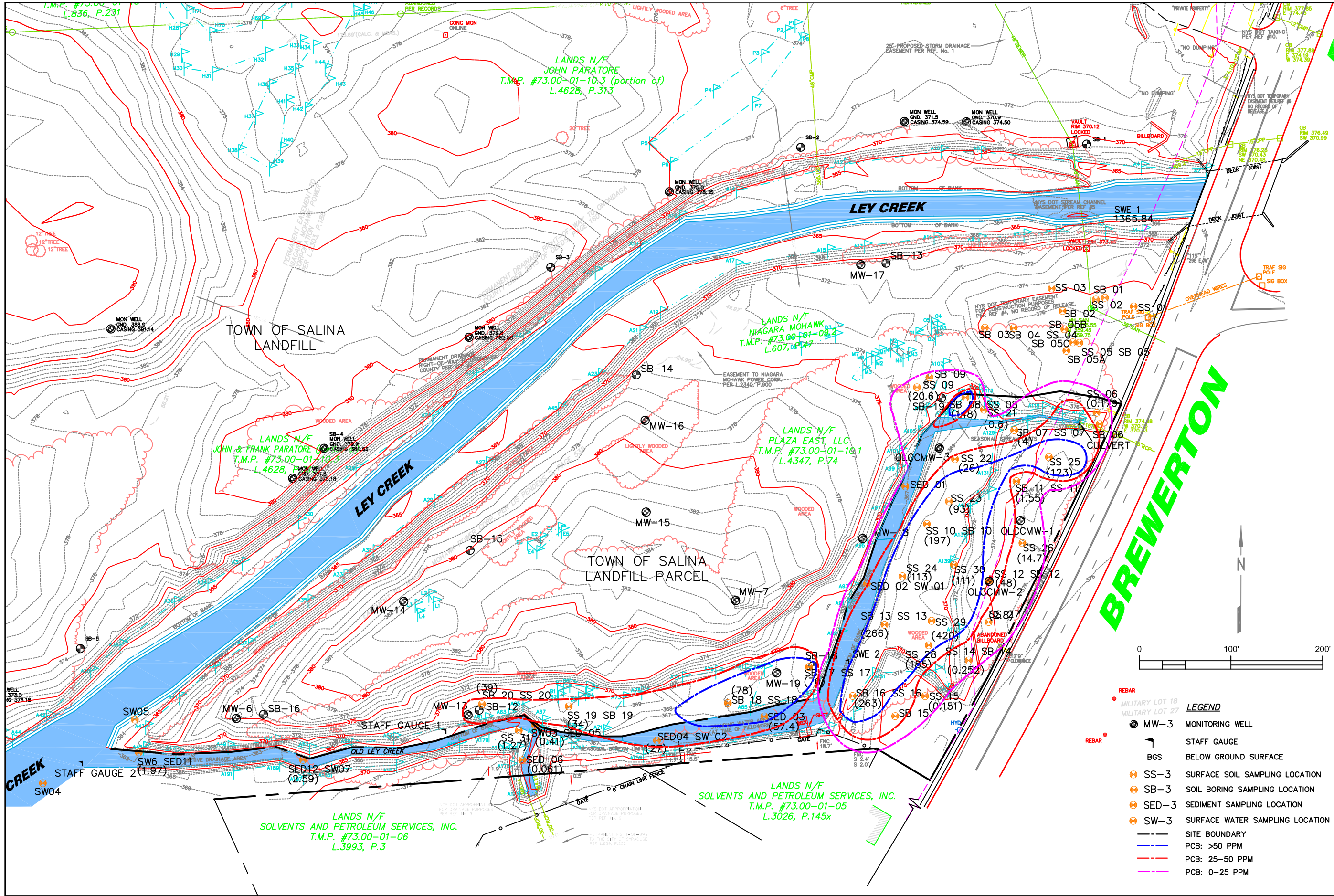
<div></div> <div>PREPARED BY: EA ENGINEERING, P.C. AND ITS AFFILIATE EA SCIENCE AND TECHNOLOGY</div>				Old Ley Creek Channel (Site No. 7-34-074) Remedial Investigation TOWN OF SALINA, NEW YORK				FIGURE 3-4 GROUNDWATER CONTOUR MAP (24 MAY 2010)			
PROJECT MGR. SLG	DESIGNED BY SLG	DRAWN BY DW	CHECKED BY SLG	DATE JULY 2010	SCALE AS SHOWN	PROJECT NO. 1436842	FILE NAME GWContours	DRAWING NO. 1 OF 1	FIGURE FIGURE 3-4		



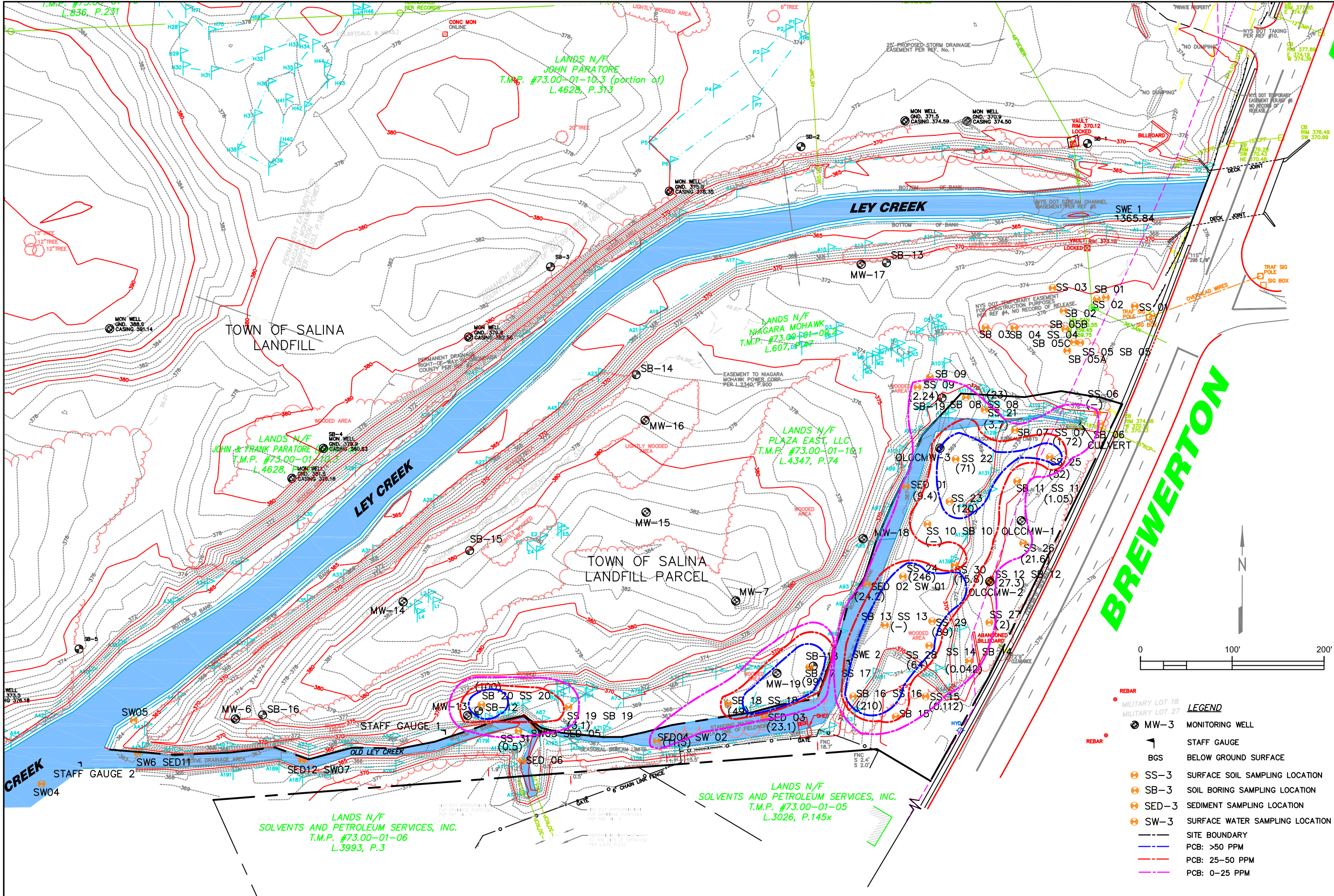
PREPARED BY: EA ENGINEERING, P.C. AND ITS AFFILIATE EA SCIENCE AND TECHNOLOGY	Old Ley Creek Channel (Site No. 7-34-074) Remedial Investigation TOWN OF SALINA, NEW YORK			FIGURE 3-5 WETLAND DELINEATION MAP		
	PROJECT MGR.	DESIGNED BY	CHECKED BY	DATE	SCALE	PROJECT NO.
SLG	SLG	SLG	SLG	JULY 2010	AS SHOWN	1436842
			DRAWN BY	FILE NAME	DRAWING NO.	FIGURE
			DW	OLCC_Wetland	1 OF 1	FIGURE 3-5



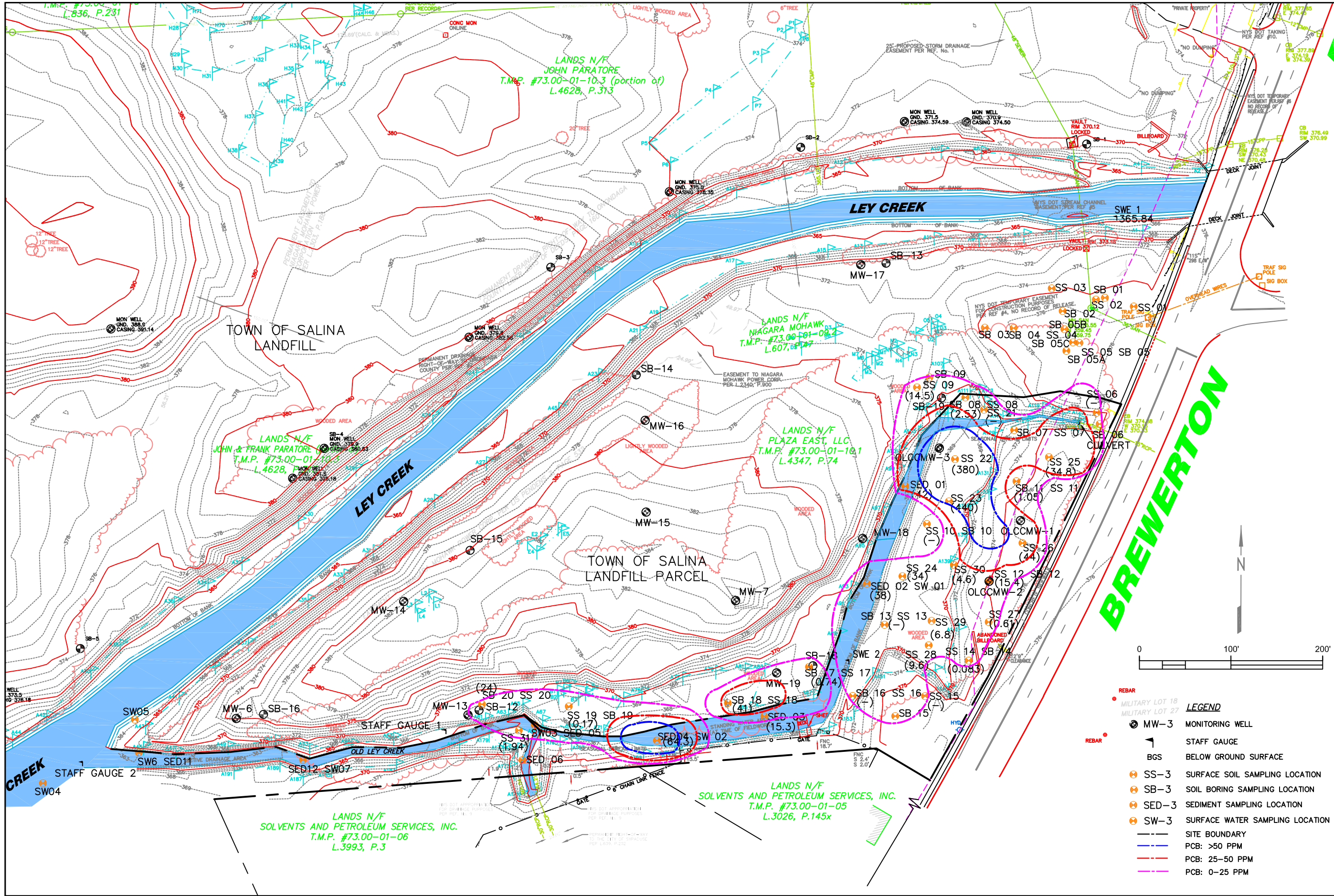
PREPARED BY: EA ENGINEERING, P.C. AND ITS AFFILIATE EA SCIENCE AND TECHNOLOGY	Old Ley Creek Channel (Site No. 7-34-074) Remedial Investigation TOWN OF SALINA, NEW YORK			PROJECT NO. 1436842		FILE NAME NonPCBMap		DRAWING NO. 1 OF 1		FIGURE FIGURE 3-6	
	SURFACE SOIL/SEDIMENT VOCs, SVOCs, PESTICIDES, PCBs, AND METALS CONCENTRATION EXCEEDANCE MAP										




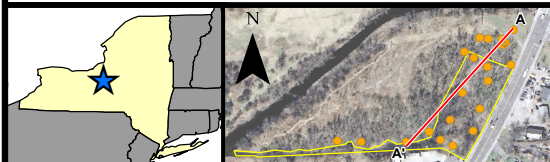
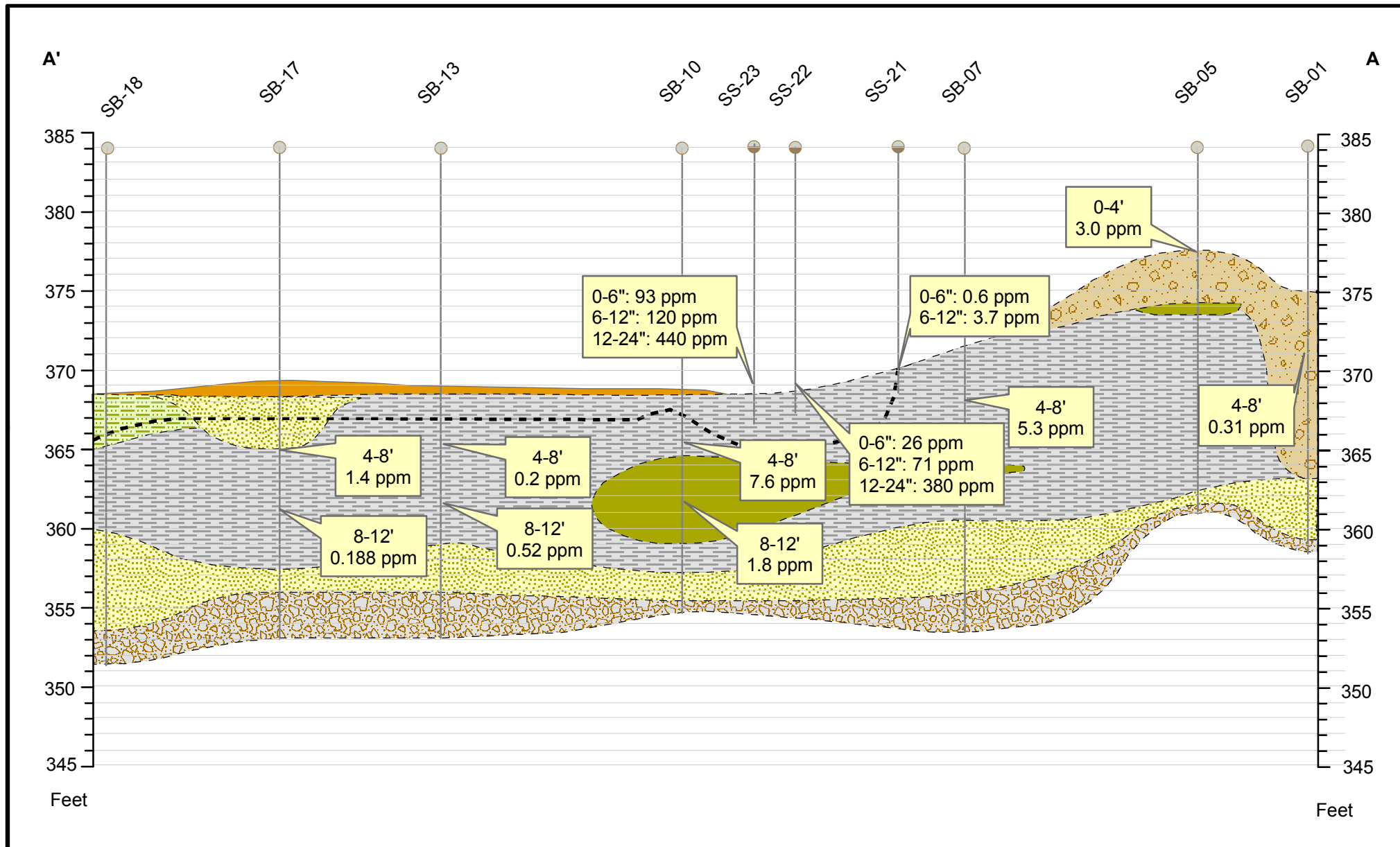
PREPARED BY: EA ENGINEERING, P.C. AND ITS AFFILIATE EA SCIENCE AND TECHNOLOGY	Old Ley Creek Channel (Site No. 7-34-074) Remedial Investigation TOWN OF SALINA, NEW YORK			SURFACE SOIL/SEDIMENT PCB CONCENTRATION CONTOUR MAP (0-6 IN BGS)		
	PROJECT NO.	1436842	FILE NAME	PCBContours	DRAWING NO.	1 OF 1
	DATE	JULY 2010	SCALE	AS SHOWN	FIGURE	FIGURE 3-7
DESIGNED BY	SLG	DW	CHECKED BY	SLG	PROJECT MGR.	SLG



PREPARED BY: EA ENGINEERING, P.C. AND ITS AFFILIATE EA SCIENCE AND TECHNOLOGY	Old Ley Creek Channel (Site No. 7-34-074) Remedial Investigation TOWN OF SALINA, NEW YORK			FIGURE 3-8 SURFACE SOIL/SEDIMENT PCB CONCENTRATION CONTOUR MAP (6-12 IN BGS)		
	PROJECT MGR.	DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE
SLG	SLG	SLG	DW	SLG	JULY 2010	AS SHOWN
			PROJECT NO.	FILE NAME	DRAWING NO.	FIGURE
			1436842	PCBContours	1 OF 1	FIGURE 3-8



					PREPARED BY: EA ENGINEERING, P.C. AND ITS AFFILIATE EA SCIENCE AND TECHNOLOGY					Old Ley Creek Channel (Site No. 7-34-074) Remedial Investigation TOWN OF SALINA, NEW YORK					FIGURE 3-9 SURFACE SOIL/SEDIMENT PCB CONCENTRATION CONTOUR MAP (12-24 IN BGS)						
PROJECT MGR.		DESIGNED BY		DRAWN BY		CHECKED BY		DATE		SCALE		PROJECT NO.		FILE NAME		DRAWING NO.		FIGURE			
SLG		SLG		SLG		DW		SLG		JULY 2010		AS SHOWN		1436842		PCBContours		1 OF 1		FIGURE 3-9	



Legend

- Top Soil
- Fill Material
- Peat
- Silt and Organics
- Silt and Clay
- Silt and Sand
- Till
- Estimated Base of Soil with PCB Concentrations >50 ppm

0 20 40 60 80 100
Feet



Old Ley Creek Channel Remedial Investigation (Site No. 7-34-074)
Town of Salina, New York

FIGURE 3-10
NORTHEAST-SOUTHWEST
GEOLOGICAL CROSS SECTION
AND PCB CONCENTRATION PROFILE

PROJECT MGR:
SLG

DESIGNED BY:
JCP

CREATED BY:
JCP

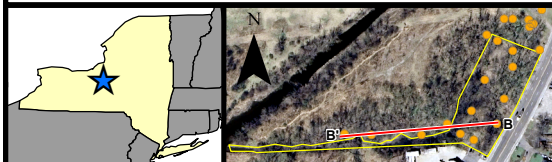
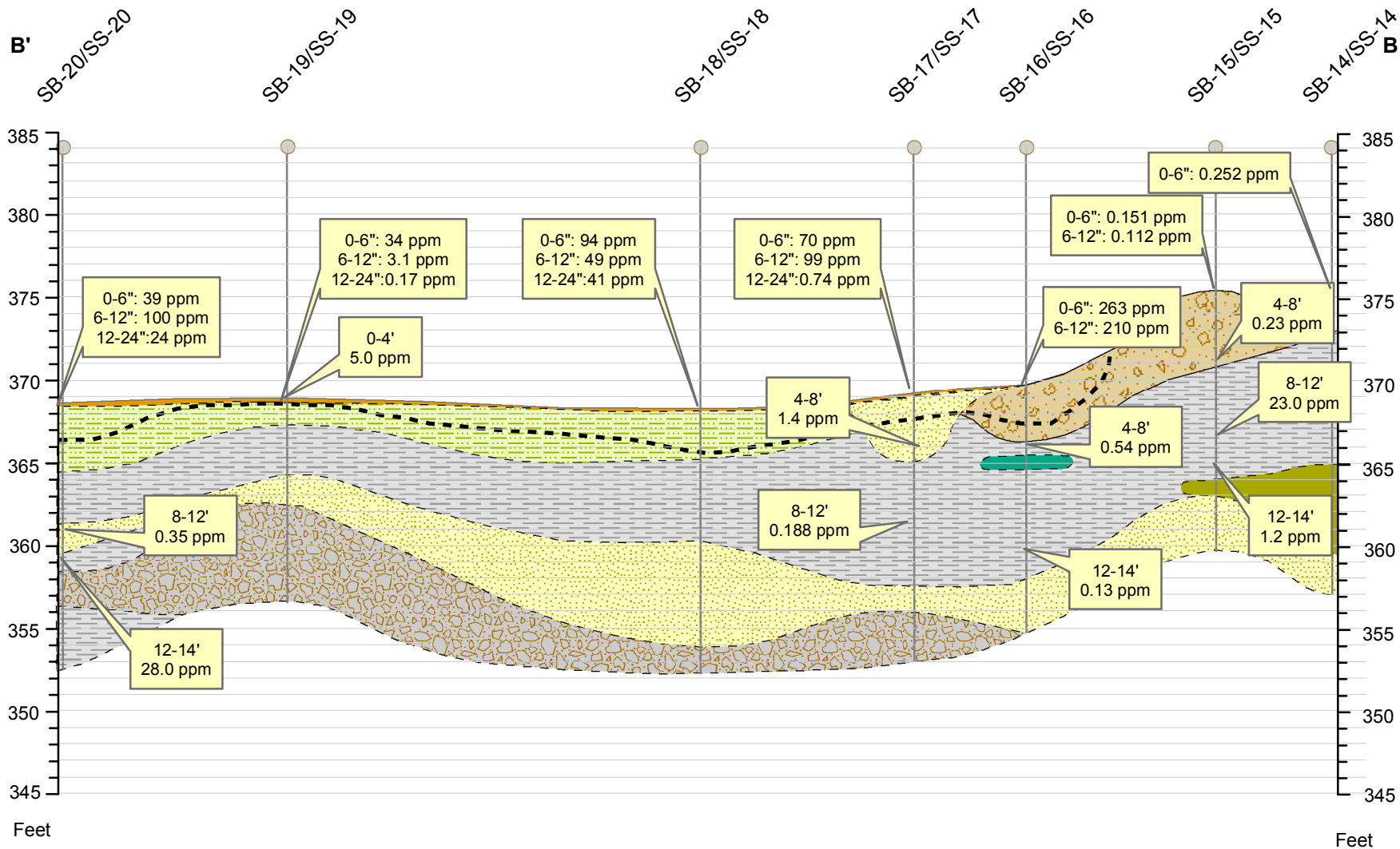
CHECKED BY:
SLG

SCALE:
AS SHOWN

DATE:
JULY 2010

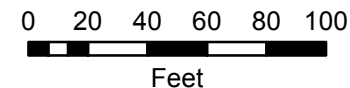
PROJECT NO:
14368.42

FILE NO:
G:\Projects\State&Local\NYSDEC\ID004438 -
Inv_Des\1436842_Old Ley Creek\GIS\FIGURES



Legend

- Top Soil
- Silt and Clay
- Silt and Sand
- Fill Material
- Creek Deposits
- Till
- Silt and Organics
- Peat
- Estimated Base of Soil with PCB Concentrations >50 ppm



Old Ley Creek Channel Remedial Investigation (Site No. 7-34-074)
Town of Salina, New York

FIGURE 3-11
WEST-EAST
GEOLOGICAL CROSS SECTION
AND PCB CONCENTRATION PROFILE

PROJECT MGR:
SLG

DESIGNED BY:
JCP

CREATED BY:
JCP

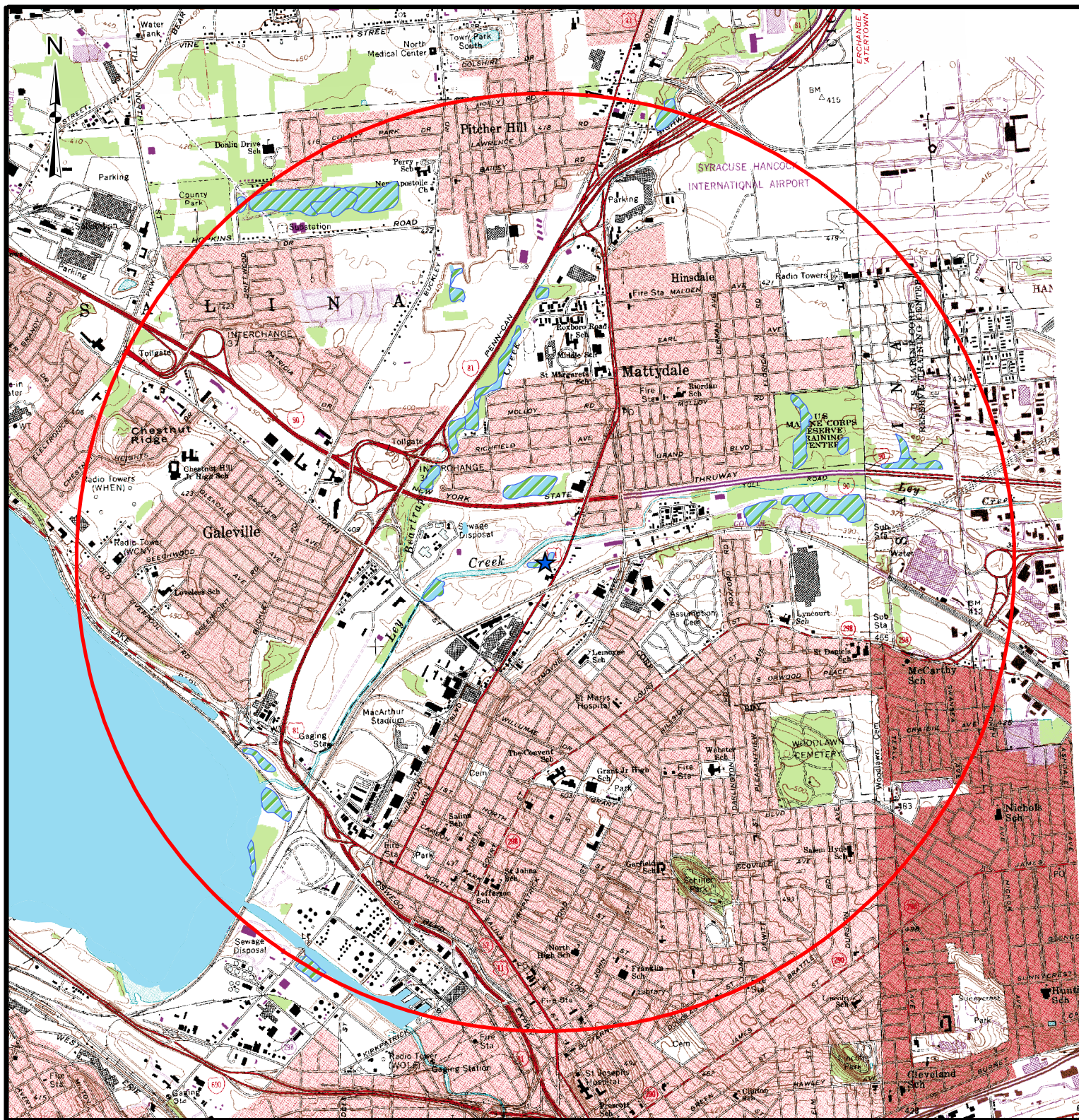
CHECKED BY:
SLG



SCALE:
AS SHOWN

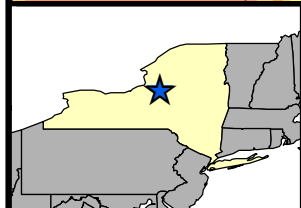
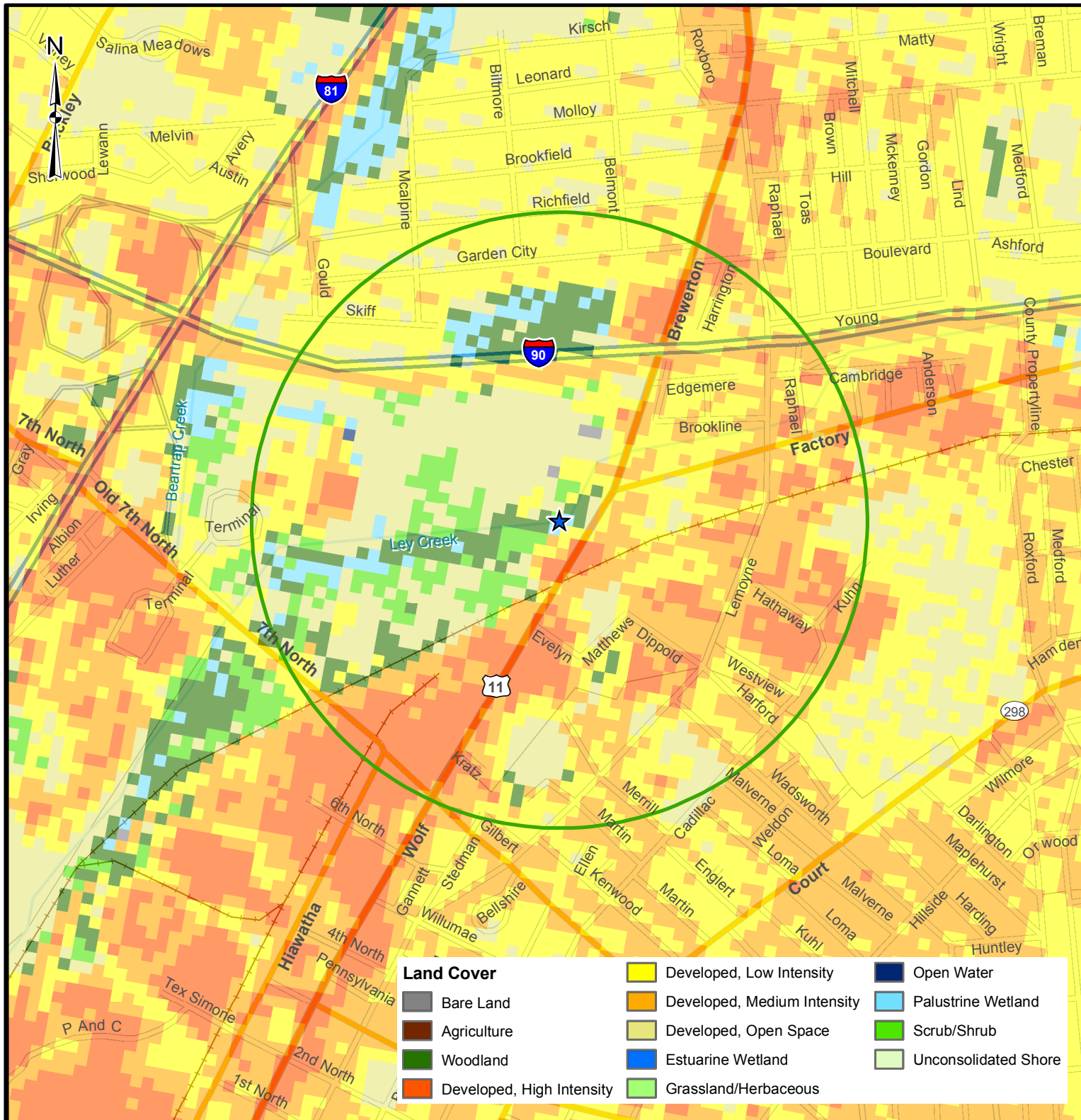
DATE:
JULY 2010

PROJECT NO:
14368.42

FILE NO:
G:\Projects\State&Local\NYSDEC\ID004438 -
Inv_Des\1436842_Old Ley Creek\GIS\FIGURES



 		Old Ley Creek Channel Remedial Investigation (Site No. 7-34-074) Town of Salina, New York				FIGURE 6-1 USGS TOPOGRAPHIC MAP	
PROJECT MGR: SLG	DESIGNED BY: SAB	CREATED BY: SAB	CHECKED BY: SLG	SCALE: AS SHOWN	DATE: JULY 2010	PROJECT NO: 14368.42	FILE NO: GIS/FIGURES/ FIGURE6-1.MXD



★ Site Location
 □ 0.5-mile Radius

0 0.25 0.5
 Miles

SOURCE: NYSDEC National Heritage Program
 ESRI StreetMaps, 2005



Old Ley Creek Channel Remedial Investigation
 (Site No. 7-34-074)
 Town of Salina, New York

FIGURE 6-2
 LAND COVER

PROJECT MGR:
 SLG

DESIGNED BY:
 RSC

CREATED BY:
 SAB

CHECKED BY:
 SLG

SCALE:
 AS SHOWN

DATE:
 JULY 2010

PROJECT NO:
 14368.42

FILE NO:
 GIS/FIGURES/
 FIGURE6-2.MXD